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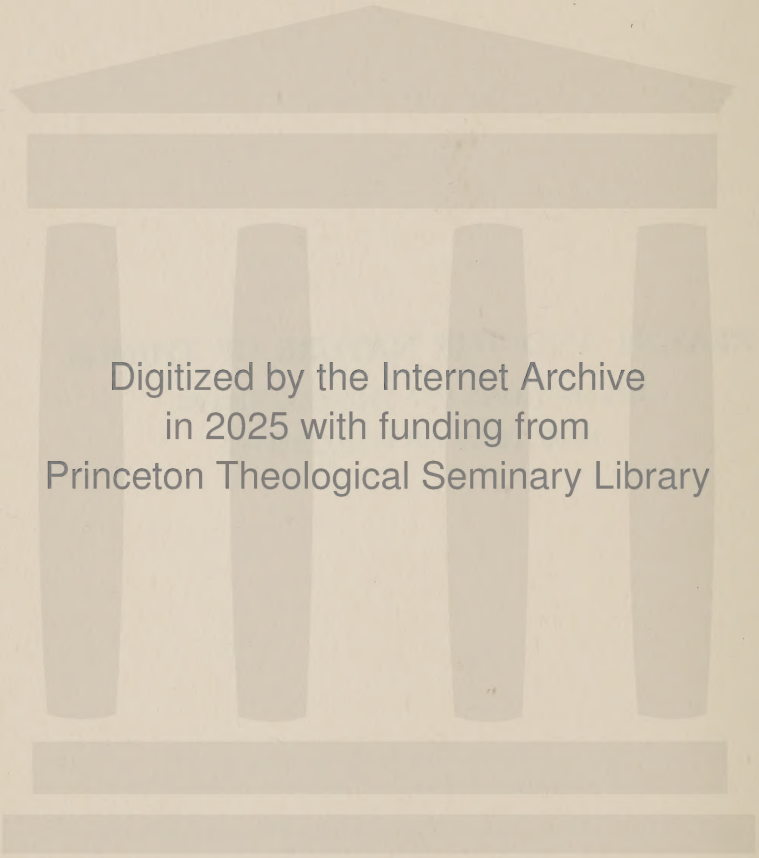
REASON AND THE NATURE OF THINGS

REFLECTIONS ON THE COGNITIVE FUNCTION OF PHILOSOPHY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REASON AND THE NATURE OF THINGS

REFLECTIONS ON THE COGNITIVE FUNCTION OF PHILOSOPHY

BY
J. LOEWENBERG

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TO
JEANNOT

PREFACE

This book, which comprises the ninth series of the Paul Carus Lectures, addresses itself to no special class of readers. The themes treated and the manner of treating them will, I fear, find little favor in the eyes of those whose preoccupation with the technical minutae of philosophy may have deadened or corrupted their appreciation of its broader aspects. The issues here presented are speculative and the method adopted dialectical. "Analysts" and "salvationists," to borrow the names given by a facetious critic to persons driven to excess by certain current "winds of doctrine," will look askance at the issues as well as the method. The first will take umbrage at my flexible and often metaphorical language, the second at my aloofness in this work from non-cognitive or spiritual topics. Fortunately, analysis and salvation, though not mutually exclusive, can hardly be said to constitute, even at the present time, the lion's share of philosophic concern and activity.

The title and subtitle taken together may suggest perhaps the general tenor of the undertaking. What I have attempted to do is to combine some contentions that at first sight may seem incompatible. The arguments running through the entire series of reflections have to do with the cognitive aspect of philosophy as compared and contrasted with that of science. The philosophic spirit is speculative and the philosophic enterprise free, yet philosophic knowledge, hardly scientific in any strict sense, is as indispensable as scientific. By their different ways of inquiry science and philosophy seek equally to understand the nature of things, and their understanding, if communicable, must be equally embodied in reasoned discourse. And the things open to exploration

by the sciences remain what the sciences find them to be in spite or even because of their being translatable to the different dimension of philosophic thought.

What is science? This of course is the crucial question. We know in general what the sciences are: they are identifiable by specific names in accordance with the specific nature of their subject matter. But Science in the singular is not expressly given with the multiplicity of the sciences. The discovery of Science in the sciences, strange to say, is not a scientific discovery. The unity of science forms no part of the content preëmpted by any special discipline. The assumption that any expert in any particular field of specialization can speak with authority for all science involves the fallacy of begging the generic question. The generic fallacy, as shown in the text, is committed perhaps more often than any other. The generic meaning of the sciences is a philosophic construction based on comparative study of their various procedures and different contents. It is the product of an activity I choose to call generification. But of such activity, which ascribes to the sciences a common methodology or a common ontology, a plurality of results is possible: the sciences are comparable from different points of view comporting with the philosophic positions under whose auspices the comparison is made.

I offer no apology for venturing to examine the generic meaning of the sciences without having intimate acquaintance with the details of any specific science. Here ignorance is almost though not quite the bliss it is proverbially taken to be. The issue being principally dialectical, discussion of technical matters drawn from a special discipline would obscure rather than clarify it. Such discussion would only be an excursus betraying the generic fallacy. No familiarity with any given field of scientific inquiry is needed for consideration of the dialectic relating to acts of specification and generification. Examples less naïve than those I have chosen might strengthen but could hardly militate against the arguments propounded.

Distinction between exegesis and illustration should be particularly borne in mind in connection with the philosophers I have mentioned. Philosophers have of course their illustrative uses. I have refrained from quoting passages from the authors discussed, not only because lack of space precluded lengthy and adequate citations, but chiefly because of a fear that side issues might tend to usurp the importance of main issues. Textual criticism, which documentation is apt to provoke, would here have been out of place. To the charge of faulty scholarship one is inevitably exposed when dealing with a writer's opinions torn from their contexts in order "to point a moral." But defect in interpretation need not vitiate the argument for the elucidation of which reference to other men's ideas may be useful. The argument might still be significant and worth urging notwithstanding the ineptitude of the reference or the inaccuracy of the interpretation. I must thus beg the reader not to be distracted from the issues themselves by anxious feelings of something amiss in my limited views of this or that philosopher.

A case in point is the use I have made of Kant and Hegel in my defense of dialectical pluralism. I have of course taken many liberties with both thinkers; and if what I have read into their texts should be deemed one-sided in the light of a more complete interpretation of them, my plea simply is that no such interpretation could here have been either intended or attempted. To be sure, exegetic irresponsibility cannot be carried too far without enfeebling the argument which justifies reference to matters amenable to textual verification. I trust that the statements about various authors made for illustrative purposes throughout the book, though partial, will be found unmarred by partisanship. The cogency of an argument would be strange indeed if it involved deliberate injustice to thinkers invoked in its corroboration.

The pluralism I have contended for, with some support from Leibniz and Hegel, is the pluralism of philosophic positions. It will be noted, however, that I do not equate pluralism with mere

plurality. The plurality of philosophic methods and philosophic languages is a fact none can deny, the question at issue being the possibility of unifying such plurality in monistic or pluralistic terms. Unity and plurality are distinguishable but inseparable correlatives. The fallacy of the suppressed correlative, as I have called it, implicit in the emphasis upon one term to the exclusion of the other, can be avoided by a pluralism conceived as representing a product of speculative generification.

Many terms that occur in the text, generification being one, will no doubt seem odd. They are all idioms natural for me to employ. Philosophic language is incorrigibly idiomatic, in the sense defended in the book, and I could not have written in a style inconsistent with the philosophic position to which I am committed. To criticize a philosopher for not speaking in a different language is to ask him in effect to change his philosophy. I have thus not hesitated to avail myself of some uncommon words, often deliberately coined, to suit the purpose I had in mind, not being bound of course to exchange my purpose for one not my own. On the whole I have sought to eschew too elaborate a technical vocabulary, relying for the most part upon plain English to carry the force of the argument. For the introduction of one word, however, the word "meta-scientific," I feel that I must apologize. It is so clearly mongrel. "Metaphysical," a close synonym, though of noble pedigree, has become prolific of so many undesirable issues that their suggestions would have been intrusive in contexts in which a term descriptive merely of that which transcends or goes beyond science seemed preferable.

My avoidance as much as possible of direct polemic should not be construed as desire to appear irenic. With the dogmas of analysts and salvationists I do indeed quarrel but only if understood as rejecting the claims of reason. A philosophy, if achieved by reason and submitted to reason, is inevitably open to internal criticism. The imperative to conform to the law of contradiction is, so to speak, a categorical imperative, and to question its au-

thority is to rob of probative force all reasoned and discursive arguments. A philosophy embodied in a form vitiated by self-inconsistency cannot seriously be thought of as tenable. Such criticism is always pertinent. But external or extraneous criticism is simply impertinence. A philosophy is not seldom reproached for being what it is and not something entirely different. Judgment of a theory by alien criteria, such as are laid down by its rivals, is tantamount to the fatuous demand that it become, in Hegel's idiom, "its own other." There are not a few doctrines now in vogue behind whose hypercritical principles lurks an ultradogmatic temper. I name no names, not permitting myself the luxury of futile controversy. If what I have in mind happens to fit some contemporary exemplar of dogmatism masquerading as criticism the resemblance should be considered coincidental.

Although no one has seen the book in manuscript or typescript, and there thus remain blemishes a critical eye might have detected and helped to correct, into the making of it have gone influences from sources too numerous to be listed. It would be difficult if not impossible to give a full account of my obligations, for I have learned much from many, from those among the dead and from those among the living. My principal indebtedness is to my teachers at Harvard, of whom Royce and Santayana must be singled out as having from such different points of view stimulated and nourished my bent toward speculative thought. John Dewey's influence came much later and it proved decisive for the development of certain interests hitherto neglected. If I add no further names it is because any choice would be one of sheer embarrassment. Nothing short of an intellectual autobiography could do justice to the task of tracing and evaluating the factors that contributed to the growth of one's philosophy. And there is always the difficulty of sifting ideas spontaneously one's own from those engendered by a sort of unwitting plagiarism. My debts to the living are too widely dispersed, and distinctions here could not help appearing downright invidious. And no statement of my

obligations would be fair if it failed to include acknowledgment of what I owe to my students and colleagues everywhere. The list would be impressively long if I mentioned by name the many persons in so many places to whom my thanks are due.

To one individual, however, my profound gratitude must not remain unexpressed. I have profited more than I can here convey from oral discussions with my friend Professor George Boas. These discussions extending over a long time have clarified and deepened my thoughts on many a basic issue. From him more than from anyone else I have received the inestimable benefits that flow from sympathetic understanding and friendly encouragement.

The first three chapters were presented as Carus Lectures at the general meeting of the American Philosophical Association held at the University of Rochester in Rochester, New York, in December, 1953. I wish to thank Miss Elisabeth Carus for her warm interest in the work and for her kind acquiescence in the delay of its completion.

J. Loewenberg

Berkeley, California, 1957

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REASON AND THE NATURE OF THINGS

Chapter I

ANOMALIES OF DOUBT

It belongs to the pathos of philosophy that no initial statement about it can fail to sound bewildering to the layman and controversial to the professional. The question, "What is philosophy?" is fraught with the embarrassments which only philosophers know. No formal definition has ever succeeded in winning general assent. The literal meaning of the word philosophy as "love of wisdom" is too vague to be useful. The identification of philosophy with its etymology is open to sundry interpretations. What is wisdom and what is love? And what bearing has a special passion for a special virtue upon a rational enterprise generally thought of as definable in terms of an appropriate subject matter or characteristic method?

Now the question concerning the proper field or procedure of philosophic inquiry is no mean bone of contention: The notion of such an inquiry, as distinct in matter or manner, constitutes a problem with which philosophers have been continually preoccupied; upon philosophy itself has devolved the task of determining its own basis and aim, purport and direction. And the task's consummation is still devoutly to be wished. For this situation there appears to be no analogue elsewhere: in any science, for example, the controversy, if it ever arises, about the exact nature or delimitation of its inquiry, is usually settled by a consensus of opinion on the part of the specialists concerned. The boundaries between the various disciplines, however variable and elastic, are fairly well fixed by differentiation of subject matter; as a rule, theoretical polemic or confusion seldom occurs regarding the definite content or extent of a specific domain of study. Even

the layman could be made to understand what in general pertains to the territory, let us say, of astronomy or archaeology, chemistry or philology. But what defines or confines the singular area of study called philosophy? It is not only to the layman to whom the nature and intent of philosophic inquiry cannot be clearly revealed; the philosophers themselves are seldom able to impart to one another, without circumlocution or *parti pris*, what precisely it is that constitutes the enterprise in which they are engaged. Has philosophy a subject matter peculiarly its own and distinctly differentiated from the subject matter of any other discipline? Does a method exist different from the method employed by the sciences that could legitimately be spoken of as belonging exclusively to philosophy? What relation has philosophic knowledge (if knowledge is what philosophy aims at) to the cognitive results of the sciences? Apart from its cognitive interests, has philosophy a meaning cognate with the meaning of non-cognitive modes of aspiration, such, for example, as find expression in art and religion? These and similar questions touch the very nerve of the philosophic activity. We are here in the region of conflicting postulates or convictions, visions or attitudes, conceptions or theories. And in that region, to echo the melancholy reflection of Descartes, "scarce anything has been asserted by any man the contrary of which has not been alleged by another."

This pithy remark is of course not confined to the philosophic situation of his time. Descartes voices a judgment that seems to have valid application always and everywhere. William James, for instance, describes the conflict of philosophic opinion in almost the same words as those of Descartes, declaring "there is indeed nothing which some one has not thought absolutely true, while his neighbor deemed it absolutely false."[1] An impressive collec-

[1] *The Will to Believe*, Longmans, Green and Company, 1897, p. 16. The full statement of which the sentence quoted is the conclusion reads as follows: "For what a contradictory array of opinions have objective evidence and absolute certitude been claimed! The world is rational through and through,—its existence is an ultimate brute fact; there is a personal God,—a personal God is inconceivable; there is an extra-mental physical world immediately known,—the mind can only know its own ideas; a moral imperative exists,—obligation is only the resultant of desires; a permanent spiritual principle is in every one,—there are only shifting states of

tion of passages with similar import drawn from various sources could be readily made. Laymen as well as specialists find this state of affairs quite perplexing. Why such claims and counter-claims? Why such mutually exclusive doctrines, such ever-recurring antitheses? Something must be radically wrong with a discipline capable of harboring so many internal contradictions: an opinion commonly held in disparagement of philosophy. Nor are those who honor philosophy inclined to belittle its discordant manifestations; indeed, candidly acknowledging the failure of philosophers to agree, they are prone to look upon this failure either as intrinsic to the very nature of the philosophic undertaking or else as symptomatic of its futility unless the conditions are removed to which the failure may be attributed.

There is a favorite diagnosis of philosophic conflicts often attempted and phrased chiefly in terms of methodology. The trouble with philosophy, so many critics aver, may be traced to the fact that its votaries pursue their aims by procedures essentially heterogeneous. Hence the anarchy of philosophic assertions. And such anarchy is unavoidable, and indeed incorrigible, so long as these assertions are not amenable to a single canonical standard. Although philosophers might speak the same natural language (in whatever tongue or syntax) and be guided by common rules of logic (whether syllogistic or not) they must necessarily express incongruous opinions if incompatible are the methods of using these identical discursive media, not to speak here of the different procedures relied upon for ascertaining the contents to which the asserted opinions have reference. In disciplines other than philosophy, notably in the sciences, uniformity of method would seem to account in large measure for the concordant results achieved; and this uniformity applies to all the phases or stages of the investigative process. Men of science agree with respect to the conditions under which observation may be said to be veridical;

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mind; there is an endless chain of causes,—there is an absolute first cause; an eternal necessity,—a freedom; a purpose,—no purpose; a primal One,—a primal Many; a universal continuity,—an essential discontinuity in things; an infinity,—no infinity. There is this,—there is that . . . ."

they agree about the requirements for adequate description of the phenomena observed; they agree regarding what constitutes crucial experiments and working hypotheses; they agree concerning the degrees and limits of inductive generalization. They agree in many other ways; the many-sided agreements among men of science touching the application of a common methodology to their various fields of investigation renders knowledge in one scientific domain generally harmonious with that in every other. What is meant by the unity of science or by science in the singular cannot be readily stated. One meaning, however, is not too far-fetched: it has to do with the standards or criteria governing in similar if not identical fashion the investigative process of knowledge; and because the disciplines concerned with disparate phenomena are nevertheless united in their approach to them by comparable procedures (though by different techniques) these disciplines are entitled to be called sciences and constitute a cognitive family, as it were, in virtue of their methodological affinity. Science, in a generic sense, is thus but a name for this affinity: there is science because sundry disciplines, sundered from one another in subject matter, exemplify in their various activities cognate investigative methods. Geology and bacteriology, for example, though separate as regards the nature of the phenomena they investigate, are of a cousinship with respect to the methodology governing their investigation.

Of course, the situation is not so simple; the methodological affinity of the sciences may be easily exaggerated and the analogy between their objects unduly ignored. Nevertheless, whatever be the kinship between the different kinds of philosophy, it would be difficult to maintain that the kinship is one of method. Surely, by the same method, if similarly adopted and similarly applied, philosophers could scarcely have arrived at results so diametrically opposed. The philosophic penchant for opinions at such variance is not duplicated in those disciplines in which investigative procedures are subject to consentient criteria. It is thus not unnatural to look upon the contrary or contradictory opinions with which philosophy is so replete as proceeding from incom-

patible methods of inquiry. The record of philosophy, a record of never-ceasing contending claims none capable of gaining universal acceptance, illustrates, not only absence of agreement among the experts in defining the proper subjects of their study, but it illustrates principally the presence of incongruous modes of procedure in dealing with even such subjects in the delimitation of which they concur. When the diagnosis of philosophy takes this form, perennial and irreconcilable conflicts appear as but inevitable symptoms of a chronic instability due to methodological aberrations. But there is nothing in any discipline, as not a few doctors have always believed with singular confidence, which the application of a sound method could not effectively cure, the only question being which among all the possible methods is to be given precedence or endowed with supremacy. Here's precisely the rub!

The diagnosis of philosophic conflicts in terms of discrepant methodologies precipitates one of the major difficulties inherent in philosophy. The difficulty, not usually present in other disciplines, has to do with the manner in which a philosophy embarks on its undertaking. Here, if anywhere, it is *le premier pas qui coûte.*

It is a difficulty at once obvious and subtle. Any philosophy must of course have its point of departure but what point is to be regarded as appropriate? Can everything serve as a beginning or is the starting point determined (as it is in any science) by the method directing the inquiry? In what sense may anything be said to be posited or given for the purpose of initiating the philosophic activity? Later on I shall consider this matter in some detail. Here I merely wish to invite attention to an obvious consequence involved in methodological diversity. If the philosophic enterprise can be carried on in different ways, the beginning will naturally vary in accordance with the way chosen; it should not be surprising, therefore, to find philosophic starting points as heterogeneous as are the methods prescriptive of them.

It is sometime said, however, that philosophy plunges *in medias res,* a maxim vague enough not to be untrue. In the order of

genesis, any intellectual discipline, in the life of the individual or in that of the race, is of comparatively late origin, and Hegel's image of the owl of Minerva, freely interpreted, is not inapposite. But the "middle" in which philosophers are alleged to begin is anywhere and everywhere, depending upon their interest or bias, and the locus of the "middle," whether in nature or experience, will shift and waver in accordance with the method by which they are guided. So even here the choice of method is decisive; the starting point *in medias res,* if it is to have any habitation and name, will be differently placed and differently identified by those radically differing in their methodological approach.

But as a rule philosophers seek to begin at the beginning; they stipulate what in the order of their inquiry is to be considered "first" from which or by means of which the undertaking must proceed but, alas, they are notoriously at odds concerning the choice of proper candidates for the office of priority. I scarcely need to rehearse here the contradictory claims to priority made for a multitude of beginnings. Points of departure deemed exclusively prior have been identified with sundry things—with external facts and inward sensations, with axiomatic principles and arbitrary postulates, with logical presuppositions and ineffable intuitions, with innate ideas and sense impressions, with unimpeachable dogmas and complete doubt. The array of the different things said to mark the beginning of philosophy, things with which or from which the discipline is to take its departure, may of course be extended, and such extension would but confirm the notion here suggested, namely, that a multiplicity of starting points is altogether in keeping with the multiplicity of methods to which philosophy is amenable. If one method requires, for example, that philosophic inquiry begin with sense experience, another will demand that it proceed from principles of reason. Whatever the starting points, the priority they enjoy is due to the methods employed, so that anything posited as primary in accordance with one kind of methodology will of necessity appear in the light of another as derivative or secondary. The possibility of so many and such divergent beginnings would seem to indicate

that methodological pluralism, to use this locution, is inherent in the very nature of the philosophic undertaking. And to this pluralism we may trace the anomaly that the exemplars of exclusive priority have been so diverse—diverse facts and diverse concepts, diverse intuitions and diverse postulates, diverse categories and diverse beliefs. But the question of priority in connection with methodological pluralism will occupy us later.

A familiar illustration of the difficulty here adumbrated is furnished by Descartes. And the illustration is instructive, for, strange to say, the method made famous by Descartes sanctions more than one starting point for his philosophy and in this, as we shall presently note, consists its paradox.

Descartes is supposed to have based his philosophy on the method of doubt, but he is also supposed to have based his philosophy on the method of geometry and arithmetic. The relation between the sceptical method and the mathematical method is quite curious: the provisional attempt of the sceptical method is to undermine reason; faith in reason is a necessary assumption of the mathematical method. To start with doubt, and with doubt so complete that nothing is left untouched by it, is one thing; it is surely another thing to start with clear and distinct ideas, with self-evident axioms or principles, such as are required for geometry and arithmetic. With what then should, according to Descartes, the beginning be made if philosophy is to be constructed on unshakable ground? If constructed in imitation of a mathematical system, philosophy does not need to start with doubt, for geometry and arithmetic have for their foundation not doubt but certainty, as Descartes at least interpreted that foundation. Whence then the necessity of doubt? But if doubt *is* the actual starting point, and doubt universal in sweep, the axioms or principles of geometry and arithmetic, swept away as they are by a doubt from which nothing must be excepted, can obviously not serve as models for philosophic points of departure. If philosophy is to be inspired by mathematics, doubt is unnecessary; if initiated by doubt, emulation of mathematical certainty would seem to be

precluded. Such is the dilemma implicit in the Cartesian Method.

We are not unaware, however, of the manner in which Descartes is alleged to have dealt with the difficulty here broached. Cartesian doubt is not ordinary doubt. If exercised as the philosopher prescribes, his doubt is said to imply a certainty far exceeding the certainty requisite for, as well as vouchsafed by, the pursuit of geometry and arithmetic. For the certainty of these mathematical disciplines, be the certainty self-evident or demonstrably evident, presupposes faith in reason; without such faith, it is clear, no evidence of any sort adduced in support of axioms or principles could have the slightest force. But it is precisely this antecedent faith in reason that may be impeached by the sceptical method if universal doubt constitutes the true beginning of the Cartesian philosophy. The provisional scepticism of Descartes is not initially concerned with the restoration of the faith in reason assumed in mathematics; this scepticism is but intent upon a special kind of certainty for which there is no archetype in geometry or arithmetic, namely, the certainty of doubt itself, always and ever confirmed by the very process of doubt, serving as basis for the self-evident proposition, "I think, therefore I am." To be sure, once the self-evident proposition, implicit in the exercise of doubt, receives explicit formulation, it may then be regarded as analogous to a geometrical axiom, transcending indeed any axiom in self-evidence, since the more the proposition be doubted, the more compelling its certainty. The dilemma mentioned, therefore, may be said to vanish: the method of doubt furnishes a proposition of even greater self-evidence than the self-evidence claimed for any mathematical axiom or principle initially laid down, and the method of doubt, when employed after the manner of Descartes, provides for philosophy a sure foundation in imitation if not emulation of geometry.

But the dilemma does not disappear. It still remains true that philosophy does not require the method of doubt for imitating or emulating the certainty ascribed to mathematics; and if philosophy does require tentative doubt to insure certainty, the certainty it is alleged to secure is not of the sort exemplified in mathematics.

It is important to remember that the doubt with which Descartes begins is provisionally destructive of all assumed or established certainty including mathematical; such unlimited doubt can prove at the outset nothing more than its own limitlessness, yet it is this very limitlessness which serves as basis for the unique certainty expressed in the proposition, "I think, therefore I am." Difficult, indeed, to understand what we are here to take as uniquely certain, the certainty of doubt as an intellectual activity, a certainty ever fortified by further doubt, or the certainty of the existence of a mind requisite for discharging this activity. For our present purpose it matters little whether uniquely certain is the activity or the agent implied by it. Granted the agent's existence to be as indubitable as the activity, and indubitable because doubt itself makes it so, here is an absolute certainty to which there is nothing comparable in mathematics. This certainty on which philosophy is expected to build is so singular and so supreme that (if irony be here no impertinence) it should serve as model for the mathematical disciplines instead of appearing as a certainty declared to be modeled on them. So if with doubt the actual beginning is to be made, and a doubt capable of adhering to the foundation as well as the fruition of all mathematics, such doubt can furnish proof (if proof it be called) of nothing else than its own unique certainty or the unique certainty of a doubting mind. Whatever else is proved certain, if anything can be so proved in accordance with a method exacting unlimited doubt as starting point, is at best provable only by analogy.

The analogy, it may be shown, is rather remote or weak. No proofs of God's existence or of mathematical truth, which are here decisive, can be made to resemble the proof of mind as doubt's indefeasible agency or agent. Mind's certainty alone follows from the certainty of doubt, for doubt cannot turn upon itself without bearing witness anew to the ineluctable certainty of mind, all other claimants to certainty obviously not being in this privileged position. Doubt of God's existence proves nothing except the existence of a sceptical mind; indeed, universal scepticism proves to be the bedrock of one certainty only, the certainty of a

doubting subject, and the objects or propositions doubted, whether those of theology or mathematics, must always retain their doubtful status, since their very doubtfulness alone insures the indubitable truth of the *cogito ergo sum.* Inferable from this *cogito* is in the first instance nothing but the *cogito* itself, the inference from it of a *res cogitans* being quite problematic. Assuming, however, the *res cogitans* to be as certain as the *cogito,* the certainty mind enjoys is not only prerogative but solitary. Whatever the initial grounds for an all-inclusive scepticism, these grounds do not forfeit their supposititious validity as a result of the *cogito,* for I may always continue to dream and be deceived in spite of the indubitable proposition that *I* must exist to be subject to illusion or deception.

The attempt to render tenable any analogy between the method of doubt and *more geometrico* would run up against the following differences. (a) No mathematical proposition, however self-evident it appears, can ever boast of that degree of self-evidence alleged to pertain to the *cogito.* A geometrical axiom can of course be always doubted, on grounds Cartesian or other, and by the process of doubt its axiomatic character becomes rather shaken than reinforced. The *cogito* alone is in the unique position of having its certainty made more impregnable by doubt. (b) One mathematical proposition, assumed or demonstrated to be true, may serve as evidence in the proof of another, provided rules of inference or deduction are laid down, and accepted as binding, for the necessary passage of one statement from another in a certain sequence and order. The *cogito,* if taken seriously, can furnish no evidence for the demonstration of anything else; derived from doubt applied universally, not excepting the rules of inference or deduction by which statements may be shown to have necessary connection in terms of antecedent and consequent, the *cogito* is a proposition singular and exclusive from which nothing can be made to follow save the endless reiteration of "I think, therefore I am," unless indeed the grounds initially held to justify complete scepticism are subsequently and arbitrarily abandoned. (c) The criterion or standard to which mathematical statements are amenable, whether

called consistency or coherence, is obviously not open to doubt without reducing to absurdity all mathematical reasoning; the demand that true or valid statements be free from contradiction, or be consistent with themselves and with one another, this demand is grounded in antecedent faith in reason, and scepticism of such faith is altogether incompatible with the spirit and method of mathematics. But the *cogito,* again if taken seriously, is subject to no rational test, since it is derived from doubt of the very faith in reason upon which all proof depends, mathematical as well as philosophic, the result being that the *cogito* represents a proposition either unprovable and thus uncertain or else demonstrably certain only in accordance with the dubitable criteria by which mathematical reasoning is guided.

The *cogito* can hardly be taken seriously as basis for a philosophy aiming at demonstrable certainty comparable with mathematical. Irremediable, it would seem, is the contrast between the method of doubt to which the *cogito* owes its probative force and the method characteristic of mathematics. The mathematical method can invest no statement with that absolute truth to which the *cogito* lays claim, on the ground that it alone, and nothing else, can survive the process of doubt; the mathematical method presupposes acceptance of rules for the derivation of one true proposition from another, doubt of these rules being a condition of proving the indubitable truth of the *cogito;* the mathematical method rests on the faith, which the method of doubt must provisionally impugn, that self-contradiction is a mark of falsehood and consistency a criterion of truth. How, then, can it be maintained that mathematics typifies most enviable certainty, and that the method of doubt is but a scrupulous way of following in philosophy the example set by geometry and arithmetic?

The answer is clear: if philosophic certainty be patterned after mathematical, the beginning with universal doubt becomes a useless encumbrance; if the actual beginning of philosophy be such doubt, any certainty claimed for mathematics must go by the board. From this dilemma there is no escape for a philosophy seeking in com-

plete scepticism a foundation equal if not superior in security to that of mathematics.

How flimsy a foundation initial scepticism actually affords, the following considerations will disclose. Some points, though urged in one form or another by other critics, are worth our emphasis here.

The ambiguity of the *cogito* is fatal to the claim that it exemplifies an incontrovertible certainty. The *cogito* is one thing, the resulting *ergo sum* is quite another. The notion of an agency is of course not identical with that of an agent. Doubt as an act of thought is indeed demonstrably certain in the very process of being exercised. No proof other than the *cogito* itself is here requisite, since it expresses nothing else (and also nothing more) than the occurrence of thinking as agency, and as long as thinking occurs, no doubt can impugn the agency, for in all doubt, even of doubt itself, the presence of the agency becomes manifest. But the *ergo sum* requires proof of a different order. The presence not of the agency of thought but of an agent of thought, and an agent identified by the personal pronoun as *this* agent, that presence no process of doubt, however reiterated, can by itself render indubitable. It is always possible to doubt the existence of the agent without enfeebling by means of such doubt the certainty of the agency. Strictly speaking, it is not only possible but necessary to include within the power of a doubting agency the supposititious agent of it; the agency and not the agent gains in certainty and becomes increasingly fortified by a continual resurgence of doubt. If the agent's certainty is to become as impregnable as that of the agency, we must have recourse not to doubt but to faith in reason, such faith as inspires the work of mathematics. The *ergo sum* is an argument asserting that the agency of thought implies an agent of thought, and this implication is undeniable either because the denial can be shown to be self-contradictory or because the affirmation may be exhibited as a consequent following consistently from the antecedent. The faith in reason, however, to which the *ergo sum* appeals, is a faith that can and must initially be doubted,

such doubt being the very foundation upon which the indefectible certainty of the *cogito* is alleged to rest. The *cogito* and the *ergo sum* are thus poles apart with respect to the evidence they invoke. The evidence furnished by the process of doubt can prove nothing except the occurrence of the process, unless criteria are admitted transcending doubt, in which case the sceptical method becomes either superfluous or frivolous.

The distinction between the *cogito* and the *ergo sum,* the latter following from the former by a procedure initially open to doubt, suffices to invalidate the sceptical method as one requisite for a philosophy modeled on mathematics. The very certainty of the *cogito* appears to depend upon the dubitable nature of the proof adduced in support of the *ergo sum.*

Let us assume, however, and for argument's sake, that the distinction thus drawn between the *cogito* and the *ergo sum* is not pertinent: the existence of the agent is not a logical deduction but an intuitive apprehension. Immediate apprehension of the agent of thought is simultaneous, as it were, with the apprehension of thought's agency. If the indubitable nature of doubt is clearly and distinctly seen to be self-evident, doubt itself being here the *only* evidence, the presence of a doubter, perceived with like clearness and distinctness to be engaged in this sceptical activity, may be said to appear as equally axiomatic. No rules of inference are thus needed to derive the sceptic from his scepticism; rather, in being sceptical, the sceptic is intuitively certain at once of the doubting activity and of himself as the agent of this activity. The activity of thought, then, as indubitably affirmed by the *cogito,* is the intuitive ground for affirming the *ergo sum,* the thinker's presence being directly perceivable in the act of thinking.

Admitting this to be a plausible escape from the dichotomy of the *cogito* and the *ergo sum,* let us briefly examine the meaning of doubt as an act of thought and the conditions of its possibility. We are not now concerned with the *cogito* as revealing, whether rationally or intuitively, the *ergo sum;* what we wish to consider is the nature of the *cogito* as inherent in the exercise of doubt. In what consists this exercise?

Clearly, doubt is not a random exercise. As Descartes conceived it, doubt is dictated by the quest for certainty, being thus provided with a rational incentive. Everything may provisionally be doubted of which the certainty cannot be firmly demonstrated or established. To entertain doubt regarding perceptions or conceptions, opinions or beliefs, principles or axioms, is to challenge the evidence they are asserted to rest on, and so long as the evidence is not groundlessly impeachable, the agency of doubt remains in force.

No need to recount here the familiar articles of impeachment drawn up by Descartes in relation to the available evidence in support of our presumptive knowledge. Presumptive indeed is knowledge in every form, and thus doubtful, until we have indefeasible assurance that we are not deceived in the evidence to which we habitually give credence. There is always the possibility that our so-called veridical perceptions may be illusory, no more trustworthy than dreams; and there is always the contingency that even in our most exact reasoning, as in the sphere of mathematics, we may be beguiled by a malicious demon to accept as true that which might not be so.

If knowledge is to satisfy the demand for absolute certainty, the claim to such certainty could be impugned without the aid of dreams or demons. There are other and less extravagant ways open to any critical mind for calling in question the veridical nature of perception and the reliability of our reason. Whence *can* come infallible insurance against deception once deception is assumed to be possible? Imaginative use by Descartes of dreams and demons accentuates in an extreme but striking manner the possible deceitfulness of human cognition. For Descartes, it is important to insist, says at the outset merely that we *may* be deceived, and how can he be unerringly gainsaid? The exercise of doubt is inseparable from the quest for certainty for the sake of which alone it can be intelligibly initiated. For doubt is primarily attached to anything which is but alleged as certain, and doubt cannot cease until the allegation is proved.

But doubt so construed can obviously not be inaugurated without a prior conception of the sort of certainty the doubting mind is in

search of. The certainty, ordinarily imputed, whether to perceptions or beliefs or propositions, is always open to question; the tentative sceptic may reject all putative certainty as deceptive. Yet, without *supposed* certainty the method of doubt would have no object of application: the method requires antecedent recognition of many possible pretensions to certainty as subject to distrust. What is the certainty which the doubting mind seeks to arrive at as distinguished from the certainty which it begins by discrediting? And how may the certainty sought be identified as possessing such authenticity that cessation of doubt will of necessity follow in its wake? Here we come to the crux of the matter and to the ultimate paradox of the sceptical method.

The Cartesian method, it has now become apparent, does not begin, indeed cannot begin, with doubt. Doubt is an act of thought applied to *prior* cognitions presumed to be certain, and doubt is also an act of thought *culminating* in a proposition whose certainty doubt can no longer assail, the assault serving but to fortify it. It is an act of thought, phrased succinctly, which passes from putative to probative certainty, and the force of the latter emerges only as a result of exhibiting the former as resting on problematic grounds. The *cogito* alone, and nothing else, can thus enjoy a provable certainty, and solely because doubt of its probative force is the very agency enforcing and re-enforcing the proof. But the attempt to undermine all putative certainty for the sake of leaving secure but one proposition hinges on assumptions completely at variance with the method of doubt.

Indispensable, of course, is the assumption of a valid standard by which the sceptical mind must be guided in challenging putative claims to certainty necessarily asserted prior to the exercise of doubt. Precedent claims to certainty, as already observed, furnish the very pabulum for initial scepticism; without them the doubting mind would have nothing to reject as dubitable.

Consider one of the stock examples cited by Descartes. The supposition that we may be dreaming when we believe ourselves to be awake *pre*-supposes the validity of the distinction between

veridical and illusory experience in the absence of which the supposition would be altogether meaningless. To this mode of calling in question the truth of our perceptions neither a perpetual dreamer nor one incapable of dreaming could attach the slightest significance. Acceptance as valid of the distinction between dreaming and not dreaming is obviously an antecedent condition for applying the method of doubt to the deliverances of perception, the issue being whether the validity of the distinction is more than putative, whether, that is, it can be justified beyond a peradventure. So if all perception be doubted because all perception may be illusory as dreams, the exercise of such doubt depends upon the presumption (a) that between veridical and non-veridical experience the difference is generally intelligible, and (b) that a standard exists for assigning to one specific experience one status, and to another another. To relinquish this presumption is to surrender the method of doubt itself, for the method has no other aim than to challenge the adequacy or sufficiency of the evidence alleged to support the veridicalness of perception.

The application of the method to reasoned propositions, this being the other example, is equally precluded without certain distinctions presumed to be antecedently valid. How is it possible to doubt mathematical propositions demonstrable in accordance with a prescribed procedure and an accepted standard of proof? How (to use Descartes' own illustration) may credibility be withdrawn from the proposition that two and three together make five? Of course, given the rules and procedure of arithmetic, we cannot help believing in the validity of the proposition, its contrary or contradictory being actually inconceivable. But why? Is it because of human helplessness, so to speak, or because of the proposition's intrinsic certainty?

Everyone is familiar with the notion of a demon invoked by Descartes, playfully or seriously, for the purpose of impairing the certainty of the proposition mentioned, and thereby our trust in any proposition, mathematical or other, grounded in reason. The hypothesis, if so it may be named, of a deceiving demon, an evil genius as powerful as God, employing his cunning in causing us

to err, even where the evidence for certainty is as conclusive as in mathematics, such hypothesis is sufficient to shake our confidence in every belief held on rational grounds. To remove all error due to the possible existence of a supposititious demon—and the supposition of his *possible* existence is here enough — "I must," to quote Descartes' famous words, "inquire whether there is a God . . . and if I find that there is a God, I must also inquire whether he may be a deceiver; for without a knowledge of these two truths I do not see that I can ever be certain of anything."

The supposition of a deceiving demon, serving to make universal doubt initially plausible, and all for the sake of arriving at the indubitable *cogito,* is too extravagant not to seem rather ludicrous were it not for the fact that the supposition formed an integral part of a great thinker's methodology. And, for all we know, the excursion into demonology might well have been intended by Descartes as a deliberate *jeu d'esprit.* Yet we must treat the demon with seriousness, for his hypothetical existence alone can justify in such extreme form initial distrust of reason, and to the errable nature of reason, as well as to that of perception, the *cogito,* we must remember, owes the unique pretension to unerring certitude.

The hypothesis of a deceiving demon involves crucial distinctions the validity of which cannot be doubted if the hypothesis is not to dissolve into nonsense. The major distinction is between God and Demon differing in essence with respect to only a single attribute. But for the presence of goodness in the one and its absence in the other, God and Demon would be completely identical. Ancillary distinctions are involved, all requisite for the justification of universal scepticism pending the proof of God's existence, and all presupposing reason's trustworthy ability clearly to conceive and to maintain them. I shall set forth briefly the indispensable conceptions of reason, if reason is to be discredited by feigning that it is at the mercy of an imaginary demon's possible machinations.

The conceptions, seven in number, are as follows: (i) The conception of God possessed of all the traditional attributes such as are defined by a rational theology, among these attributes being

the attribute of goodness or the will not to deceive; (ii) the conception of a demon essentially indiscernible from the conception of God, except that the demon is a deceiver; (iii) the conception of a non-existent God, the reality of God corresponding to the idea of God still awaiting proof by reasoning that merits confidence; (iv) the conception of an existent demon, the demon being essentially God but God thought of as deceiver; (v) the conception of a demon as causal explanation for our inability to reason otherwise than we do (for example, in arithmetic and geometry), such inability being no indication of truth but rather of the putative presence of a diabolical power engaged in beguiling our intellect; (vi) the conception of an adequate ground for faith in reason, this being understood as involving proof of God's actual existence and of God as non-deceiver; (vii) the conception of doubt as warrantable challenge to reason's criteria for ascertaining truth, whether in mathematics or in other fields, until God's existence, supplanting the demon's, can be proved with categorical certainty.

Such are the conceptions which Descartes needs to begin with for the purpose of applying his sceptical method to reason and patently inimical to that method. I would not venture upon these scholastic subtleties if I did not believe that in them lies the most glaring indication of the Cartesian paradox. To start with universal doubt, as Descartes is alleged to have done, is to start with the necessary conditions upon which the possibility of universal doubt must depend, but to begin with these conditions, is clearly not to begin with universal doubt. Reason's criteria can here be called in question only by a reasoned distinction between two abstract entities; one, named God, must be conceived as remaining in a state of suspended animation concerning existence, while the other, specified as demon, may be feigned as real and as rejoicing in the diverting pursuit to deceive us. This is surely, to say the least, an odd way of casting doubt on our propensity to trust reason. But, then, oddity is not uncommon in philosophic discourse and, let me hasten to add, not confined to it. Yet if so many rational notions are required for evincing reason's precarious state, would it not have been more in accord with the principle of parsimony to have

started outright with faith in reason, seeing that for the very exercise of doubt such faith is a prerequisite? But that would have precluded the *cogito* from being in possession of the singular certainty based upon the alleged completeness of doubt.

It is thus always the *cogito* which is found to be at the root of the Cartesian paradox. By way of accentuating the paradox further, we may note that the certainty of the *cogito,* supposed to be derived from universal doubt, *pre*-supposes the ineluctable distinction between truth and its opposite; without this prior distinction, the *cogito,* whether regarded as intuition or proposition, would be altogether groundless.

An intuitive certainty (if this be what the *cogito* is said to exemplify) depends for its authenticity upon concomitant features, such as clearness and distinctness, serving as criteria. It is not *as* intuition that the *cogito* commands philosophic assent but as a *true* intuition, and true precisely because it accords with a predoubted and undoubted standard. The *cogito* can be asserted to emerge triumphant from doubt because its truth is the truth of all clear and distinct ideas, clearness and distinctness being antecedently posited as the indelible signs of their trueness. By these marks alone may the certainty of the *cogito* be apprehended as surviving the challenge of doubt, but it can so survive only if no doubt attaches to the way in which a true idea must be intuitively known as true.

And if the *cogito* asserts a proposition held to be demonstrably true, the rules of logic must possess prior validity, the probative force of the demonstration being possible only in conformity with them. If it be contradictory to deny the inference of the *ergo sum* from the *cogito,* and if consistent thought thus requires that the inference be affirmed, the truth of the inference must always hang in the balance unless the law of contradiction and the criterion of consistency are stipulated in advance as exempt from doubt. In default of such stipulation, would it not be utterly gratuitous to argue for the truth of the *cogito* on the ground that the proposition it expresses cannot be denied without contradiction, the affirmation of any proposition following generally and consistently from the

assumed impossibility of its denial? Here again something antecedent must be immune from doubt if by means of doubt a proposition is to be established as deriving its certainty from the very agency of doubt. No truth of the *cogito* without accredited rules of logic; no universal doubt as basis of the *cogito* if rules of logic are free from doubt.

Turn as we may, the paradox of a quest for certainty through doubt remains egregious and irremediable.

In the last analysis, and this is the irony, the *cogito* is useless for the part it was intended to play. Assuming the *cogito* to involve a tenable proposition, what precisely is its function in a methodology presumably inspired by mathematics? More careful scrutiny would reveal the *cogito,* as the first certainty vouched for by doubt, to be at best a dialectical *tour de force* and at worst an inescapable *cul-de-sac.* But of this brief mention only is here feasible.

Granting mathematical reasoning to have a sure foundation (whatever be such foundation and however ascertained), philosophic reasoning, if it is to be patterned after mathematical, must rest, of course, on a basis equally secure. Can the *cogito* serve the same purpose as does, for example, an axiom in Euclid's geometry? Hardly. In anchoring the *cogito* in doubt, its very denial culminating in affirmation, Descartes produced an axiom far exceeding in probative force any of Euclid's; the philosophic method thus turns out to have a groundwork of incomparable security, the mathematical method, its ostensible model, being sustained by no such unshakable basis. We need not repeat an earlier observation: any analogy between mathematical and Cartesian procedure breaks down for the simple reason that mathematical certainty *must* initially come within the purview of doubt if the indubitable certainty of the *cogito* is to be established. By the licence it provisionally enjoys doubt may tamper with any and every certainty except the certainty of the *cogito.*

It is indeed a curious logic that requires a philosophic method to imitate as well as to excel the mathematical in security of starting point. The beginning is to be made with a quasi-Euclidean

axiom — namely, the *cogito;* the procedure followed, however, actually starts by challenging all supposed certainty, mathematical included, to discover thus the only proposition confirmed by such universal doubt, a proposition unique in its claim upon the title of axiom. What a tremendous *tour de force* to construe in the likeness of this unrivaled proposition the initial assumptions requisite for geometry or *vice versa!* Can we seriously maintain that to imitate a method we must first set it aside by doubt? Can we seriously argue that the method by which the *cogito* is established bears any resemblance to any other which we are enjoined provisionally to discredit? And can we seriously conclude that the truth of the *cogito* (assuming it to be self-evident) suffices to reinstate our suspended trust in the enviable procedures of mathematical reasoning?

The truth of the *cogito* alone, as Descartes explicitly taught, is not sufficient to restore our shaken faith in reason. The reiteration of "I think, hence I am" cannot by itself stop the supposititious machinations of a demon. A diabolic spirit may still deceive us in everything but the *cogito,* and must continue to do so if not displaced by God; not until the proof is established that God exists and that God is not a deceiver, can we put our trust in man's rational achievements such as the mathematical disciplines exemplify. The procedure to which the *cogito* owes its unique certainty renders uncertain, and perpetually so, every other procedure, comparison between the *cogito* and a geometrical axiom being, as already noted, unwarranted.

The possibility of unlimited doubt until God's existence is assured, with the *cogito* occupying exclusively the field of certainty, condemns the Cartesian method to absolute sterility. It can lead nowhere but into a *cul-de-sac,* and, by the method proposed, there is no way out of it. That God's existence as a non-deceiver requires to be proved after and not before the proof of the *cogito* is here of uppermost importance. God's existence is initially open to doubt simply because it is a doubt which is necessary for the certainty of the *cogito* — and once this certainty is won, what next? What indeed? Thereafter nothing whatever can be retrieved: everything

must remain in the precarious state of suspended belief in which doubt originally left it. For from a universal scepticism so successfully set afoot no retreat is possible. Doubt must continue to adhere to preception: that we may be always dreaming is a supposition which cannot be abandoned if the truth of the *cogito* is to remain in force. None of Euclid's axioms can be rescued (though the models of self-evidence chosen for philosophy to parallel), for the demon may be always assumed to employ his cunning to delude us, an assumption redounding to the invincibility of the *cogito.* The distinction between veridical and illusory experience thus irrevocably called in question, as well as the distinction between truth and error, what can be salvaged from sceptical havoc? Nothing but the *cogito!* All else is open to rejection, always so open, until faith is regained in criteria for valid knowledge, whether empirical or rational, scepticism of which is the condition for the axiom of the *cogito.* But such faith can never be regained. From the *cogito* no further step can be taken without surrender of the method to which the *cogito* owes its vaunted certainty. No wonder Descartes has to resort to God to save experience and reason from remaining, if only by hypothesis, drastically and forever so deceived and bedevilled.

But the way back to God appears to be irretrievably blocked. All the arguments for God's existence can possess as such no cogency in the absence of antecedent faith in reason. Prior to the Cartesian proofs of God, it is well to remember, the lurking existence of a deceiving demon is a tenable hypothesis. If we may be cozened by an evil spirit to yield assent to mathematical proofs, why not also to theological? All human reason may be impugned until God has been shown to exist as the guarantor of human reason, and yet it is by a reason still without warrant that the existence of its Divine guarantor must be proved. What a paradox! Be the proofs of God cosmological or ontological, and be they ever so buttressed by such evidence that its denial would entail contradiction, reason's inability to dissent from these proofs may be due to a demon's dupery, the same cunning being here at work which produces acquiescence in mathematical demonstrations. Once

the deceiving power of a demon is invoked to make universal scepticism provisonally plausible, nothing hereafter can revoke that power, unless perchance the method of doubt itself be renounced, and with it the singular certainty of the *cogito.* From the initial and only result of the method nothing whatever can be inferred if all rules of inference — indeed, all laws of thought — may be at the mercy of the devil, a fiend, as here conceived, potent enough to conjure up the very idea of God and to implant all the arguments for God's existence.

This, of course, is a reduction to the absurd of the Cartesian method on the assumption that the starting point of his philosophy is universal doubt and the *cogito* the sole certainty surviving such doubt. It has been necessary to traverse ground all too familiar to show what follows from an uncompromising acceptance of that assumption. If universal doubt is requisite as basis of certainty, the certainty so secured depends upon continual exercise of doubt, for with the cessation of the exercise the assurance it alone can vouchsafe must cease also. The famous "I think, therefore I am," often interpreted as the cornerstone of modern idealism, is said to guarantee the primacy of mind; to enjoy primacy, however, the mind must perforce be a mind perpetually in doubt. No positive act of thought, i.e., an act affirming the existence of anything, entails necessarily the thinker's existence, for both thought and thinker may always come near the clutches of doubt. Thus, only as doubter may the thinker celebrate his existence, the certainty of the "I am," being co-extensive and co-terminous with but one act of thought. Since mind can reveal its presence solely in the practice of doubt, the evidence of its presence must forthwith vanish with the suspension of the practice. Doubt accordingly is a privileged act of thought, indispensable as it is for the claim of mind's primacy, and any attenuation of doubt must inevitably weaken the claim. By a strange irony, acceptance of the *cogito ergo sum* as the logical underpinning of modern idealism implies an irrevocable commitment to unceasing scepticism. The incorrigible sceptic alone can be sure of the indefeasible primacy of mind to which his scepticism bears witness, and, if such primacy is a funda-

mental of idealism, then the only consistent idealist is the complete sceptic.

But the experiment in scepticism, we need to remind ourselves, is only a part and the inchoate part of the Cartesian method. With God as guardian of our restored faith in reason, the Cartesian method proceeds in positive fashion and in accordance with accepted rules and fixed criteria governing discursive thought. Suspicion of reason being allayed once and for all, the Cartesian philosophy can henceforth rely for its demonstrative force on a procedure akin to the mathematical, and the *cogito ergo sum,* so momentous a proposition at the start, becomes in the sequel a forgotten thesis. In actual application to the major issues touching the nature of knowledge and of reality, the Cartesian method is strikingly dogmatic, if the word be understood in no invidious sense but only as an antonym for sceptical which is an epithet descriptive solely of the first step in reflective procedure. The problem of starting point is crucial for every philosophy but especially so for the Cartesian in the methodology of which that very problem is singled out as the keynote. And Cartesian methodology complicates rather than solves the problem; being deeply ambiguous, it leaves us with the formidable dilemma already noted. If in the beginning is complete doubt, no certainty is possible save the sterile certainty of doubting; and if the beginning must be made with the conditions necessary for the process of doubting, the actual starting point is obviously not scepticism but a prior dogmatism.

What emerges from our discussion is the contention that faith in reason is a categorical assumption requisite for the very process of casting doubt on it. The act of doubt, as conceived by Descartes, is plainly a rational act, being ultimately a deliberate judgment passed on the evidence to which beliefs appeal in the assertion of their validity. The exercise of doubt as thus construed *pre*-supposes several conditions: (a) There must obviously be *established* beliefs open to question as regards their evidential claims if doubt is to have a definite focus or direction; (b) there must be *operative*

rules of evidence and standards of validity upon which, prior to doubt, beliefs depend for asserting their truth; (c) the challenge of doubt is not to beliefs themselves (for these are psychological facts) but only to the *logical foundations* on which they are said to rest; (d) and there must be acceptance of the *principle of contradiction* if the existence of a thinking agent may be cogently inferred from the exercise of doubt. Can one conceive of the act of doubt being set in motion without these antecedent conditions? Yet this is precisely what we must be able to imagine if doubt, and doubt alone, is alleged to constitute the beginning of the Cartesian philosophy.

The allegation would appear to be altogether without meaning. It is equivalent to the contention that doubt, if it is to function as the actual starting-place of the Cartesian philosophy, must not only be universal but also unconditioned. This implies the following absurd theses: (1) The mind in which the act of doubt enjoys absolute precedence is a mind that must be conceived as *tabula rasa*: nothing but this act can occur in such a mind, any other content being by hypothesis ruled out as a prior or necessary condition for the occurrence of doubt. (2) The act of doubt thus occurring in the void must be viewed as an act without any other object of application than the act itself. (3) The act of doubt if not preconditioned must be exercised without reference to antecedent beliefs as well without being under the control of antecedently accepted principles. (4) Nothing whatsoever could be made to follow from the act of doubt in the absence of prior rules of inference or deduction, the admission of such rules as prior being of course inconsistent with the supposititious priority of doubt.

No comment is called for on theses so palpably preposterous to which nevertheless they are committed who contend that complete scepticism is the absolute beginning of philosophic inquiry.

No scepticism can be significant unless limited and conditioned — limited to pre-sceptical data, which are its objects, and conditioned by a pre-sceptical logic, exemplified in those discursive forms and rules in accordance with which the exercise of doubt as an exercise of thought must be carried on.

Now if all scepticism, the Cartesian not excepted, presupposes various limits and conditions, who can seriously maintain the possibility of *universal* doubt, even as a reflective experiment, seeing that such scepticism must not only include but must also precede whatever of necessity limits and conditions its expression? Universal scepticism just cannot be entertained without running into unmitigated absurdity. It would be rash to charge Descartes with absurdity and especially with absurdity of such magnitude, yet his method, taken strictly, can admit of no plausible construction, unless it be interpreted as a whimsical and oblique defense of our faith in reason.

Chapter II

FAITH IN REASON

The Cartesian method, the starting point of which is alleged to be universal doubt, is of perennial importance for philosophy, not because by means of it we may demonstrate incontrovertibly the supremacy of mind, in the form of the *cogito ergo sum,* but rather because the method implies an ineluctable faith in reason, for in the absence of this faith, the philosophic enterprise, whatever its special procedure or special result, would be altogether precluded. It is prior faith in reason upon which alone the method of doubt can depend for its meaning or use. This being so, the starting point of a philosophy can never be universal doubt: doubt is an act of thought reflecting upon the adequacy or sufficiency of the evidence in support of beliefs antecedently entertained or asserted. The conception of a doubting Thomas is plainly fictitious if assumed to refer to a person who without examination and for no reason at all rejects any belief that happens to solicit his assent. Such a person, if perchance existing, might or might not be pathological; at any rate, he could hardly be chosen as an adherent of the Cartesian method.

The provisional sceptic as envisaged by Descartes is a rational being whose doubt principally consists in suspecting of possible deceptiveness the grounds for our credible beliefs. Such suspicion clearly presupposes categorical criteria laid down in advance for distinguishing between valid and invalid grounds of credibility. A Cartesian sceptic, it would seem, cannot begin his task without beginning it, so to speak, as dogmatist: the faith in reason by which his scepticism is guided and controlled must be exempt from scepticism, and exempt for no reason that could be proffered without invoking that very faith.

Far then from beginning with complete doubt, as usually asserted, the Cartesian method must have for its starting point complete faith, not that reason will triumph in the end through the very agency of doubt, but rather, and this is more important, that reason has the power to initiate doubt and to initiate it as a deliberate process under the auspices of pre-acknowledged criteria of certainty. For nothing certain can be said to *follow* doubt unless something is stipulated as certain *preceding* doubt. How indeed can the validity of anything inferable from doubt be adjudged without prior faith in the rational processes to which inference owes its inception and validation?

The faith in reason to which the Cartesian sceptic is *a priori* committed remains as such impervious to reason; a rational justification of it would obviously presuppose the very thing to be justified. It is thus misleading to assert that the sort of doubt with which Descartes is alleged to have started his philosophic activity contains or provides its own antidote. What doubt has once assailed doubt by itself cannot restore; if faith in reason *can* be cogently included within the range of a scepticism conceived as autonomous, then such faith is lost forever. But if doubt itself entails faith in reason as a prior condition, doubt can but confirm, though by a route curiously circuitous and redundant, what the philosophic enterprise must always and inevitably postulate, whatever be the characteristic method chosen or the particular end arrived at. With faith in reason as postulate any philosophy must begin: even the denial of that faith, provided the denial lays claim to logical validity, is an affirmation of it.

This faith in reason, the primary postulate of the philosophic activity itself, may be exemplified by one of its manifestations, namely, the principle of contradiction. The technical formulation of the principle must be left to the logicians. But however they may phrase or elucidate it, the more general question is, why do we, or why must we, think in accordance with this principle? Whence the compulsion to avoid in all reasoned discourse statements that are mutually exclusive? What accounts for the necessity

of observing an absolute difference between affirmation and denial, so that we are precluded from asserting of a given subject contrary predicates? To say *yes,* we confidently aver, can never be the same as saying *no;* and although both may indeed be said of anything but only under variable and stipulated conditions, since the attribution of incompatible predicates to a subject is not a violation of the principle of contradiction *if* the attribution is made under changed or different circumstances, nevertheless, the act of affirmation has a meaning so indefeasibly contrasted with the act of denial that any statement in which the two acts appear as equivalent in meaning may be rejected as a flagrant case of self-inconsistency and thus as logically absurd. And concerning any statement that is logically absurd, i.e., a statement not in compliance with the principle of contradiction, we are bound to maintain not only that it is formally invalid but, in all likelihood, materially false as well. Now why do we feel thus bound?

No philosophic question perhaps is of greater importance. It would hardly be a plausible, let alone an adequate, answer to say that the principle of contradiction is a convention of discourse. A convention is, of course, always subject to change. The figures and idioms of any language, being purely conventional, are obvious examples of actual mutation and substitution in the realm of discourse. May we in like manner speak of the principle of contradiction as a conventional form of thought or expression susceptible of modification and even supersession? May we say of this principle what Hume asserted of the principle of causality, namely, that it is a propensity produced by custom? And can we conceive of an alternative propensity, equally bred by custom, by which discourse might be governed in analogous fashion?

Queries such as these are not impertinent. For in discourse not essentially cognitive the propensity to disregard the principle of contradiction may be deemed possible as well as desirable. Poetry, for example, is a species of discourse not open to criticism in terms of this principle. It is only by the use of a poetic licence, so to speak, and one for which there is little warrant, that poetic utterances may be said to have "logical" validity. Aesthetic validity, if

the word "validity" is here no misnomer, depends upon standards not altogether, if at all, under the control of reason. The attempt to apply to the language of poetry criteria germane to non-poetic diction, the diction of science, for instance, would result in disaster both aesthetic and intellectual. "Do I contradict myself?" so Walt Whitman exclaims, "Very well then I contradict myself." It is the privilege of every poet to voice contradictions and still remain "intelligible"; his pregnant images and symbols are vehicles singularly appropriate for the visions or intuitions or ideas he chooses to communicate. The poet's allegiance is thus not primarily to the rules or laws of thought; whatever his aim, cognition, in its strict sense, is not what the poet's discourse is chiefly intent upon. There are, then, forms of discourse able to dispense with the principle of contradiction, and ever subject, as are all poetic conventions, to change and obsolescence. Such forms, however, though not devoid of cognitive implications, are usually conceived and designed without explicit reference to what we think of as "knowledge" in connection with science and philosophy.

The principle of contradiction, though it may be ignored with impunity not only by poetry but by all the discursive arts, must be honored, and never in the breach, by all the species of cognitive discourse. In any field of human learning statements made purporting to reveal the nature of the objects studied shall be free from contradiction — this, if anything, has the force of an axiomatic imperative from which no cognitive enterprise can be exempt. How then is it possible to think of the principle of contradiction as axiomatic merely by the courtesy of a convention or custom, alterable in time or eventually superseded by a principle other than or counter to it?

It is of course not difficult to *imagine* a consideration of things proceeding on the supposition that the contradictory may be true: mutually exclusive predicates, such as here and not-here or now and not-now, might well be ascribed to the same object; or, to put it more precisely, a specific phenomenon might well be conceived as existing simultaneously in separate spatio-temporal contexts. In this fanciful departure from verisimilitude writers of fiction

can and do freely indulge: there is nothing repugnant to *mere* thought or speculation in the attribution of antithetical characters to any entity, whether the characters be spatial or temporal or any other, so long as the entity in question is not *asserted* to be verisimilar or real or known to exist or in possession of *esse in re* (or "ontological" in any important sense of the word). If a line is to be drawn between mere thought and cognitive thought, and if science and philosophy are to be construed as concerned chiefly with "ontology," with stated hypotheses or theories about the nature of things, in whatever terms such hypotheses or theories are couched, then the principle of contradiction must indeed be accorded inalienable primacy. For without this principle, and one antecedently postulated as compelling, no valid distinction could in theory be justified between the cognitive and the non-cognitive, and truth and fiction would accordingly have to be conceived as ultimately the same, the difference between them being merely a matter of usage sanctioned by social convention.

But how, we may ask, is the actual operation of a cognitive discipline thinkable without assuming as undeniably basic to it the principle of contradiction? Of any science it is quite clear (though of philosophy this may not seem so obvious) that the knowledge sought is knowledge by verisimilitude. Although convention plays an important part in the use of the scientific method, what the method is mainly and deliberately used *for* is to arrive at statements, in the form of hypotheses or theories, that claim to be true, and true explicitly with reference to the nature of the investigated phenomena as uncovered by the various investigative procedures.

Just as the representative arts aim at being verisimilar to what they depict, so the cognitive disciplines are analogously intent upon being true to what they interpret. To be sure, the matter is not so simple, and I shall have occasion to speak of it in some detail in another context. At present the purpose of the analogy is merely to show that the meaning of cognitive verisimilitude hinges, as does artistic verisimilitude, on an insuperable distinction between fiction and truth. Fidelity to this distinction prevents the

representative artist from gratifying his fancy without constraint, for the aim of his art is to exhibit things in their true nature as attested by normal observation and judgment. Even when his art is that of "fiction," such art, if it is to be considered as representative, must conform to the standard of verisimilitude; the distinction between veridical and non-veridical fiction, if I may here use these epithets, is comparable to the distinction between objective and non-objective painting. The category of verisimilitude applicable to any art, whatever its subject or method, presupposes the general validity of the difference between fictitious ideas or conceptions and non-fictitious.

Now scientific knowledge based upon verisimilitude involves, but in a more subtle and complicated way, the analogous distinction between the fictitious and the non-fictitious. The *objects* of scientific knowledge are assumed to have a determinate nature of their own, to be discovered by all the available devices epitomized under the name of scientific method; but the *exhibition* of this nature, in the form of stated hypotheses or theories, must of necessity conform to the principle of contradiction so long as discourse remains the medium through which alone hypotheses or theories can be formulated and communicated.

To define the contradictory in general as the fictitious might well be too hazardous but the definition can hardly be gainsaid when applied specifically to cognitive discourse. Whether the principle of contradiction has any relevance to the *content* of knowledge is indeed open to doubt: the repugnance of reason to contradiction need not be the sole or ultimate standard by which to judge the intrinsic nature of anything known or knowable. But this raises an altogether different issue. Not in dispute, however, and this is the only point that concerns us here, can be the demand that *statements* purporting to be cognitive eschew contradiction if we grant the contention that one of the disinguishing marks of fictitious discourse is contradictory discourse. In scientific discourse, the intent of which is admittedly cognitive, the principle of contradiction is the invincible criterion of its formal truth, and

its violation can never be condoned so long as scientific utterances are to remain distinct from fictitious ones.

Assuming the view to be conceded that the principle of contradiction cannot be simply reduced to a conventional rule of thought, the question of its importance might still be debated. It could be argued, for example, that, though more than a convention, the principle is no more than an empirical generalization, its prestige depending upon effective use and definite usefulness. As a matter of fact, we do regard contradiction as a sign of error, having discovered, in the course of experience, how often, when we attempt to act upon them, contradictory assertions lead us astray. In other words, and to put the matter most succinctly, the validity of the principle is inductive and its value pragmatic.

A detailed discussion of a possible defense of the principle in empirical terms would lead us too far afield and certainly much farther than our present purpose requires. Only a few brief remarks are here in order chiefly on but one implication inevitably involved in such supposed defense.

Without speaking of the logical operations which are necessary and sufficient for induction, it is obvious that not by such operations can the principle of contradiction be validated, since these very operations presuppose the universal validity of the principle. Whatever be the pre-inductive data for an induction, and however well attested by observation and experiment, no statement about their specific or general characters and relations, such as the inductive method is said to justify, can have any logical force unless it is a statement free from contradiction. To say that the principle of contradiction has but the validity of an empirical generalization is to assume it to be a product rather than a prerequisite of inductive reasoning, and a product of which the probability can be only proportional to the evidence, comparable to the probability of any other product. But how may even the *probability* of the principle be asserted without postulating the *necessity* of non-contradiction as a formal criterion of truth for any and every assertion? If the principle must serve as logical criterion for *all*

thought, whether inductive or deductive, it is surely a paradox to maintain that a condition necessary for every generalization is itself the result, and the empirical result, of generalization. It is plainly not possible to prove the validity of a postulate by assuming in the proof the postulate's validity, and the principle of contradiction is precisely such a postulate: to say that the principle is undemonstrable is to say only that its antecedent validity must be stipulated in the very process of demonstration. All logical demonstration, it is safe to conclude, depends on the principle of contradiction, and not *vice versa.* The principle is prior to logic; all discursive proof, regardless of content, must needs employ the principle, even in the attempt, albeit circular, to prove by discourse the principle to which discourse owes intelligibility.

A word will suffice to show that a pragmatic justification of the principle entails a similar paradox. No theory, pragmatic or other, can account for the origin or importance of the principle without conceding in advance its necessity as a valid condition of the formal truth to which the reasoned statement of the theory lays claim. If the defense of the principle in terms of utility is a philosophic defense, its appeal is not only to evidence, but also to inference and generalization permitted by the evidence, not to speak of other logical operations the exercise of which involves dependence upon the principle's antecedent validity. That all principles or postulates are but hypotheses, valid solely within the context of concrete experience and action, their validity being but presumptive or problematic unless they bring to fruition certain anticipated or predicted results, this is indeed a philosophic thesis of great sweep and considerable depth. But from this thesis, let it be ever so inclusive, the principle of contradiction must forever be excluded. Indefensible is every philosophic thesis if self-inconsistency may be found to vitiate the discursive articulation of its defense. As indicated before, and this applies generally, the principle of contradiction is a postulate indispensable for the philosophic enterprise as such, irrespective of the aim pursued, or the method followed, and this postulate is, as it were, a categorical imperative of thought, and not, like a hypothesis or theory,

one of its conditioned products. The attempt to derive the postulate from anything prior would but prove its prior validity, for the attempted derivation, if a reasoned one, demands use of the postulate as criterion of discursive integrity.

Absolute reliance on the principle of contradiction, though but one illustration of the faith in reason requisite for the philosophic activity, is the supreme illustration. No philosophy, if submitted as a reasoned philosophy, can evade the principle of contradiction. Of a philosophy not reasoned, or of a philosophy claiming to reason in non-logical forms, such as run counter or transcend the principle of contradiction, nothing can be said until shown that the word is not a misnomer. The term philosophy must indeed be used with incredible latitude to include under it structures of discourse that openly reject the principle of contradiction. Whether such latitude, incredible or not, can be justified, is after all a philosophic question: the asseveration, for example, that religion is a species of philosophy may be true but not merely as asseveration. The thesis maintaining that religion should be embraced within philosophy, if it be a reasoned thesis, can be maintained only in accordance with criteria governing all rational discourse, chief of which is the principle of contradiction.

A case in point is the inclusion within the genus of philosophy of such species as mysticism or existentialism or any other version of anti-rationalism, for such inclusion is either inclusion by fiat or inclusion by argument. Inclusion by fiat proves nothing except the bias prompting an arbitrary act. Inclusion by argument must have recourse to various modes of thought, such as definition and analysis and judgment. Arguments adduced in support of anti-rationalism cannot be other than rational; they have no probative force unless the reasons marshaled in their behalf are discursively articulated in non-contradictory or consistent form. So even the defense *as* philosophy of species of discourse deliberately illogical, such as depend for their effect upon ways of expression that abound in contradiction, can be undertaken, if the defense claims

to be a philosophic defense, only by means of a diction free from contradiction.

Faith in reason (of which fidelity to the principle of contradiction is so signal an example) can, therefore, not be surrendered if any thesis propounded is intended to be adjudged as philosophic. And adherence to such faith has indeed been general—in Western culture, at any rate—with the exception of those sporadic eruptions of irrationalism, concerning which it is always debatable, and debatable on rational grounds, whether they constitute aberrations or innovations. The philosophic enterprise *par excellence* is ineradicably a rational enterprise.

Even such philosophies as claim to be empirical must draw their afflatus or support from faith in reason.

The word empirical has, of course, many meanings, and this is not the place to expatiate on them. It occasionally serves to identify a certain temper of mind: everyone is acquainted with the expression "tough-minded" made familiar by William James as a synonym for empirical, but a synonym pertinent only in a biographical context. When descriptive of method, the term empirical has different and not always compatible senses, ranging all the way from the intuitive, which excludes or precludes analysis and reflection, to the experiential, which is a name introduced by S. Alexander, covering all forms of experience, thoughts as much as sensations. Nor are the biographical and methodological uses of the term completely indicative of its elasticity or ambiguity: there is also the ontological employment of it, according to which the epithet empirical may be attached to subject matter, one ultimately particular, changing, and contingent.[1] When we speak of an empirical philosophy, it is thus not always clear whether such a philosophy should be understood as reflecting a certain temperament or as constructed in accordance with a certain procedure or as exhibiting certain features asserted to inhere in the nature of things.

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[1] Cf. The writer's "What is Empirical," *Journal of Philosophy*, Vol. XXXVII, No 11, pp. 281-289.

For our present purposes, however, it is not necessary that we discriminate too sharply between the various and variable meanings of the term empirical. A philosophy designated by this adjective, with whatever sense one chooses to endow it, is nevertheless a discipline that advances a thesis or formulates a doctrine in support of which the evidential and argumentative proofs adduced are proffered as sufficient and convincing. The probative force of an empirical philosophy obviously does not reside in a mere *ipse dixit;* the validity claimed for any philosophy can only lie in factual verisimilitude and logical integrity, the basis for the latter being, as we have seen, the principle of contradiction. To this cardinal principle of reason every empirical philosophy, be its logic ever so nominalistic, must be committed in advance, unless indeed none of its arguments *as* arguments, including those for nominalism, should be deemed amenable to the demand for cogency. It is a commitment from which no philosophy can be exempt and for which faith in reason is the sole warrant.

Between rationalism and empiricism the line may indeed be drawn, and drawn from different points of view, but emphatically not with reference to the presupposed validity of the principle of contradiction. Acceptance of it by an act of faith is incumbent upon the philosophic undertaking as such, and empiricism, in any of its variants, can but prove its case, whatever be the case requiring proof, in accordance with criteria governing all rational discourse. Of course, empiricism may undertake to prove, and to prove cogently, that sense is prior to thought or that universals are derived from particulars or that matters of fact do not reveal causal or any other necessity: or empiricism may also attempt to disprove, and with no less cogency, many a tenet affirmed by rationalism. Nevertheless, the act of proving or disproving any philosophic thesis must be a discussive act in conformity with reason's basic imperatives.

One example will suffice to clarify this contention. What is the probative force of Bishop Berkeley's famous statement that "to

be is to be perceived?" Like the Cartesian "I think, therefore I am," it is an oracular utterance of diverse meanings. Is the statement the starting point or the culmination of Berkeley's philosophy? Is it but a *semantic* assertion, expressing a linguistic injunction regarding the use of the verb "to be;" or is it an *epistemic* assertion, epitomising the theory that nothing can be known of the being of anything except through perception; or is it an *ontological* assertion, embodying the doctrine that the being of anything consists in being perceived? These assertions are not equivalent, and perusal of his writings alone can determine the exact sense of Berkeley's celebrated phrase. Apart from its context, "to be is to be perceived" is but an apothegm, remarkable for literary felicity but scarcely for philosophic depth. Within its context, however, the phrase sums up a profound view of knowledge and of reality, involving painstaking analysis and inference, sweeping generalization and interpretation, the Berkeleyan philosophy being traditionally spoken of as a species of idealism, and one which represents a curious mixture of empiricism and theism.

We are of course not here attempting an exposition of Berkeley's philosophy. We only want to show that, whatever else his famed formula implies, it certainly embodies a philosophic thesis, and one that depends for its expression and defense upon the non-empirical principle of contradiction.

For in the *esse est percipi* we have in highly condensed form the statement of a double-edged argument, on the one hand, the argument for the relativity of sense-experience, and on the other, the argument for the immateriality of the external world.

Nothing exists unless given (this being Santayana's formula in reverse) and nothing is given, according to Berkeley, save a succession of variable ideas. Everyone is familiar with Berkeley's ingenious attempt to reconstruct out of our volatile ideas the world of stable things; and granted the premises, this reconstruction, as well as his transformation of solipsism into theism, is a stroke of genius. For in terms of this theism everything becomes preserved which his original analysis tended to destroy. Berkeley's God serves the same purpose as that of Descartes—namely, to

anchor in God's existence (and here incidentally is an instance of *esse* which is not *percipi*) the validity of beliefs hitherto questioned, beliefs in the world's externality and substantiality and necessity. In God then all things have their being and cause and order—this, for Berkeley, is an ineluctable inference from the major tenet that to be is to be perceived. Without this inference we remain in the predicament of solipsism (if the real is nothing else than the immediately given), and from solipsism there is no escape except through the alternative inference that the things perceived happen as a result of the unperceivable agency of a material substance.

But Berkeley's inference (as well as the alternative he seeks to supplant) would be completely precluded without prior faith in reason's principle of contradiction. In a detailed account of Berkeley's philosophy it could be shown how this principle is tacitly or overtly invoked at every step of the argument. We must here confine ourselves to two or three examples.

The statement that to be is to be perceived sets the stage for many issues, the most important being how to interpret the nature of things in the light of the empirically demonstrable fact that our sensations are so variable and relative. Of any object alleged to be single and stable, as Berkeley notes again and again, different and incompatible sensations are possible, depending upon the conditions of their occurrence. And if the qualities ascribed to things are "sensible," as Berkeley designates them, on the ground that their reality consists in being sensed, the extreme fluctuations of these sense qualities constitute a formidable problem, but a problem only, as will be indicated, on the basis of the principle of contradiction.

The subjective status of qualities spoken of as secondary, and subjective precisely because of their mutable and shifting nature, had been acknowledged long before Berkeley; the Bishop of Cloyne, in a manner hard to gainsay, simply extended the same status, and by the same method of analysis, to the qualities supposed to be primary. All qualities are sensible and hence relative

to those who experience them, the perceived quality of weight being no less subjective than the perceived quality of sound. But if qualities are perceivable through sensations often so mutually exclusive, the water in the same vessel appearing cold to one hand and warm to the other, whence the reluctance to ascribe to the *object* of experience the contrary qualities actually experienced? The attribution of opposite characters to an identical object is clearly not repugnant to sense: the water undeniably does feel, under the conditions set forth by Berkeley, both cold and warm; and if an object has no other properties than those exhibited to perception, no scruple should debar us from imputing to it whatever experience seems to warrant.

The issue is thus not an empirical one. Experience sanctions daily the description of an object (provided the object be known solely by the qualities present to sense) in terms of characters varying in different ways, and varying frequently from one extreme to another. The issue here raised has but a rational import: it is repugnant to reason to think of an object as possessing disparate properties and as describable in contradictory terms. Reason cannot, of course, give the lie to experience but reason cannot rest content with a situation which, though justifiable empirically, runs counter to the principle of contradiction. And this is precisely Berkeley's problem: How interpret the truth of *esse est percipi* so that, the relativity of sense experience being premised, the qualities pertaining to the perceived object should nevertheless be inferable both as sensible and constant.

How Berkeley solved the problem as thus stated, and whether the solution proffered was consistent and adequate, this requires study of the relevant texts. Of special interest here is merely the point that nothing except prior fidelity to reason's principle of contradiction renders Berkeley's solution imperative and pertinent. But for the rational injunction that contradiction be repudiated there would be nothing paradoxical in the assumption that things are what they are perceived as being, namely, congeries of sensible qualities fleeting and discordant. Because the assumption is paradoxical, and paradoxical for thought, thought must find a

way both to save the appearances and to preserve inviolate its cardinal postulate. Berkeley's solution of the paradox lies in according to the formula of *esse est percipi* two complementary meanings; though both signify the subjectivity of the nature of things, one is to be construed in human and the other in divine terms. The fact which the formula expresses remains for Berkeley incontestable: the analysis of the putative existence of any object yields none but perceived or perceivable qualities: the assumption that a thing can be without being perceived has no empirical basis whatever. Yet the formula is an affront to reason when limited solely to the human plane; if to be is to be perceived by a human subject alone, and thus perceived in contrary or contradictory ways, the perceived object must be thought of as possessed of attributes logically prohibited. So, while the denial of the formula involves an empirical absurdity, its affirmation is rationally preposterous.

From this dilemma Berkeley escapes, as we know, by an arresting *tour de force:* in an audacious interpretation of his formula he substitutes a divine for a human percipient, a substitution designed to guarantee the subjectivity of things in conformity with the non-empirical principle of contradiction. When the formula is applied to a super-human percipient, things perceived, without ceasing to be ideas, acquire the very stability and permanence falsely imputed to them on other grounds. Ideas thus regain their prestige as stubborn things; their true substance and causes, however, may now be inferred from a mental agency, analogous to our own, but exceeding our own in power and wisdom. In the formula of *esse est percipi* we have the epitome of a singular empiricism which requires for its basis a speculative correlation of human and divine experience and for its cogent demonstration principles with no other sanction for them than the prior faith in reason.

Rational considerations, we may observe in passing, rather than empirical, are determinative of Berkeley's denials as well as affirmations. His polemic against materialism, for example, is a case in point. Religious scruples apart, not negligible as ulterior motives

in Berkeley's philosophy, the arguments adduced for discarding the notion of a material substance clearly and openly invoke the principle of contradiction. Without offense to reason, it appears, a material substance cannot be accepted as a valid source of explanation. The ground for rejecting a material substance does not lie in its being imperceptible, for imperceptible is also spirit in its volitional and creative capacity, and the notion of a divine spirit is so indispensable for explaining the causal origin and pervasive order of the world. It is thus not imperceptibility that renders a material substance inadmissible; what necessitates rejection of such a notion is rather its logical untenability. According to Berkeley's contention, matter and cause exemplify a radical disjunction, matter being conceived by him as inert and thus without power to act, and cause as a productive agency of which the seat can be found nowhere but in a mind. Having so uncompromisingly excluded matter from cause and cause from matter, is it any wonder that Berkeley could exhibit as repugnant to reason the inference that matter and not spirit has the capacity for causative action? To be sure, another conception of matter and a different conception of cause would tend to invalidate the cogency of Berkeley's argument; in accordance with his major position, however, the conjunction of the two, like the conjunction of round and square, must seem definitely proscribed by the principle of contradiction.

Further excursions into Berkeley's philosophy are not needed to show the decisive part played in it by the principle of contradiction. Many of his assertions and denials depend for their argumentative force on the prior validity of the principle accepted on faith. Berkeley simply illustrates the fact that faith in the validity of this principle, which is ultimately faith in reason itself, no philosopher can eschew and remain true to his vocation. As regards faith in reason, empiricism and rationalism ultimately coincide, poles apart though they be in specific tenets. A detailed comparison of Berkeley and Descartes would unmistakably reveal the same commitment to faith in reason as the unquestioned pre-

requisite for their respective methods. But of this only a brief intimation can be here attempted.

The analogy between *esse est percipi* and *cogito ergo sum* is quite striking. To be sure, in one formula the accent falls on perception, whereas in the other the emphasis is on thought, and the unwary might thus conclude that they are incompatible. And so they are if understood chiefly in relation to the evidence invoked for them. The evidence from sense experience to which Berkeley appeals is notably not the evidence on which Descartes relies. Regardless of the evidence involved, however, the two statements are equivalent if construed as embodying in elliptic form judgments ontological in import. Berkeley's formula, which identifies being with being perceived, clearly presupposes the prior being of the percipient, unless we assume that the experience of perception can occur in the absence of a perceiving mind. It is the same logic by which Descartes is guided. His formula, emerging from complete doubt, leaves doubt itself unscathed, and since doubt is an exercise of thought, the thinker's antecedent existence is necessarily implied if thought cannot occur except as the activity of a thinking mind. An implicit proof for the priority of mind is thus contained in both statements, and the reasoning is the same whether the mind inferred as enjoying a privileged status be primarily a perceiving mind or a thinking mind, based as it is on the impossibility of conceiving without contradiction sensory awareness or reflective action without a prior "subject" that has the awareness or performs the action.

That the two formulas represent in condensed fashion cognate arguments may be shown by interpreting Berkeley's formula in Cartesian terms. The *esse est percipi* is in effect identical with the proposition, "I perceive, therefore I am." If not so understood, the immaterialism or idealism, which Berkeley sought to prove as the only philosophy consistent with the verdict of experience, could hardly be made to follow from it. The elliptic judgment that to be is to be perceived enunciates both a truth and a problem. The truth for Berkeley is this, that unless I pre-existed as

the imperceptible subject of my experience, there could be no perceptions, and consequently no objects inferable from them. But if this is a truth, and one never to be gainsaid, the *esse est percipi* generates the ontological problem of an external world. How justify the conception of a world existing apart from my individual perceptions, amenable to necessary laws, and evincible as a rational order? No need to speak here of the ingenious ways by which Berkeley effects the transition from an initial solipsism to a terminal theism, both shown by him to be logically consonant with the incontrovertible *esse est percipi.*

Berkeley's solipsism, which his formula *initially* entails, is plainly akin to the Cartesian, though in the formula for the latter the personal reference is more explicit. And this kinship is of interest here and requires special emphasis.

The only certainty safe from doubt, as we recall, is the existence of the mind engaged in doubting, the mind, that is, of René Descartes. If another person were to use the method to reach the same singular certainty, the ensuing result could be nothing but the proof of *his* exclusive existence, the existence of anyone else (or of anything else) being consigned by the method to perpetual scepticism. The prominence in the Cartesian formula of the personal pronoun is ineradicable; and from solipsism, in which Cartesian scepticism provisionally culminates, there can be no subsequent retreat. The proofs for the existence of a non-deceiving God (as well as the succeeding arguments concerning nature) supervene upon a scepticism too sweeping to be renounced, and on the basis of such a quicksand nothing whatever can be positively asserted. Hence, as we maintained earlier, the necessity for recognizing faith in reason as the true beginning of the Cartesian philosophic effort. But if this be the true beginning, what need is there for the elaborate process of doubt? This process, as we have noted, either becomes altogether superfluous or can but serve to confirm this prior faith in a manner tortuous and paradoxical. The very experiment in scepticism is of the kind that must presuppose the validity of rational principles, and the principle of contradiction in particular is proof against and beyond the reach

of doubt. All this is here reiterated for the purpose of indicating the similarity between the Berkeleyan and the Cartesian positions.

The truth of the *esse est percipi* is obviously a subjective truth, and he who accepts it is a solipsist *malgré lui;* other minds, being imperceptible, do not come within range of the ontology of the formula. (And parenthetically, even the *esse* of one spirit—namely, one's own—is not *percipi.*) Until other spirits are proved to exist, by one type of argument or another, it is permissible, on Berkeleyan as on Cartesian grounds, to doubt everything except such ideas as are present to a solitary self. And this doubt can manifestly not be removed by the same method to which the *esse est percipi* owes irrefutable validity as the principle of solipsism.

From solipsism, however, the escape must be made good. Can it be done by introspection? This procedure is said to reveal to a mind its own inward agency, such directly observable processes as the volitional and reflective being regarded as pregnant examples of mental activity. But introspection can give assurance of nothing but a solitary mind, the mind engaged in this very procedure; for Berkeley, no less than for Descartes, the mind initially discerned is a private mind, a subject aware, and solely *in propria persona,* of being either patient or agent. Within its private precinct a mind may indeed discover (as both Berkeley and Descartes so signally evince) a rich budget of conceptions—conceptions of other spirits and of corporeal nature and of substance and of cause and of God. But do they possess any reality without the mind? This question becomes crucial and urgent only if solipsism is not to remain ultimately triumphant. Clear it is, however, that not by a method which issues in solipsism can solipsism be revoked.

The reality of mind, if posited primarily as the necessary subject of perceiving or doubting, is unique, and nothing can be said to enjoy reality, in the same or a similar sense, unless a method is available for proving that certain notions possess not only *esse in intellectu* (to speak with the scholastics) but *esse in re* as well. Berkeley, as we know, relies upon a process in conformity with his antecedent faith in reason to extricate him from the solipsistic predicament. The principle of contradiction lies beyond the touch

of his empiricism. It is chiefly fidelity to this principle which accounts, as we may recall, for most of his major negations. The existence of material substances and material causes must be denied because, forsooth, they are inconceivable, inconceivable, that is, without contradiction, as inconceivable, let us say, as male women. What proscribes the assumption of a non-mental and extra-mental reality, apart from its empirical unverifiability, is ultimately a rational criterion: unreal here is not the imperceptible but the unthinkable. Were criteria derived from perceptual experience sufficient or decisive, there could be no possible escape from the trap of solipsism in which Berkeley finds himself caught by his apparently uncompromising adherence to empirical principles.

But it is the assertions more than the denials that reveal clearly Berkeley's firm reliance on rational principles. There is no empirical evidence, as Berkeley seems to view such evidence, for many of his positive arguments—the arguments, for example, that other spirits exist or that God exists or that God's will and God's wisdom determine the origin and order of nature. Granted that they are "acts of judgment grounded on experience,"[2] *arguments* or *judgments* are as such products of reason and discourse, depending for their truth not solely upon faithful adherence to immediate perceptions but also and chiefly upon logical consistency or freedom from contradiction. Most of Berkeley's assertions are ultimately inferences which, though describable as empirical in the sense of being grounded on or derived from what he chooses to call "experience," may also in another and no less important sense be spoken of as rational. And this is not just a matter of nomenclature: the inferences articulated in Berkeley's philosophy are the fruits of systematic ratiocination comparable to those of Descartes. All these inferences, sweeping and dogmatic, have the same aim and purport as the Cartesian post-sceptical meditations, namely, to break loose from the solipsism to which initial and rigid application of a method inevitably gives birth.

[2] The expression occurs in *A New Theory of Vision*, Section 3.

How Berkeley and Descartes seek to break away from the prison of solipsism contrived by their respective methods, and whether they make good their final escape, this is a matter of special study. We are concerned here mainly with faith in reason as a prerequisite of the philosophic vocation. This faith in reason, to which the sceptical and empirical methods are seemingly unfaithful, is nevertheless basic alike to the Cartesian and Berkeleyan positions. To this may be given added emphasis by a cursory remark on the relation of faith in reason to the resort to God regarded as equally necessary by Descartes and Berkeley.

Without prior faith in reason the resort to God, as demanded similarly by Descartes and Berkeley, would be singularly anomalous. The position of Descartes, as stated earlier, is incorrigibly paradoxical. The faith in reason, once lost through universal doubt, can be regained, so Descartes teaches, if the existence of a non-deceiving God becomes certain. But we recall the Cartesian dilemma: if doubt is possible without prior faith in reason and if such faith comes within the scope of the sceptical experiment, then nothing can stay the corrosive power of doubt, and God's existence remains forever uncertain; but if proof of God's existence is a necessary condition for reliance upon rational criteria, then such criteria must be presupposed for all arguments advanced to prove the existence of God. That faith in reason is required for the Cartesian arguments is obvious: how affirm, without antecedent adherence to the principle of contradiction, that God's essence entails his existence; or, how prove, again without prior fidelity to this principle, that the idea of God vouched for by introspection must have for its cause a real God? Faith in reason alone, and in reason's primary postulate, can justify the assertion that the definition of God involves his existence, and this faith, too, is the sole ground for asserting that in the very concept of causality lies the necessity for holding that only an existent God could have produced the idea of God.

Assertions that presuppose faith in reason are clearly useless if prior doubt can effectively impair such faith; but if faith in reason

remains inviolate because all valid thought entails it, doubt itself being an exercise of such thought, then God is manifestly not needed to insure confidence in the operations of thought. How superfluous is the role of God as the defender of the faith if faith is the condition *sine qua non* for the rational defense of anything, God's existence not excepted! Resort to God, therefore, in order to find in God's goodness anchorage for faith in reason, is a vain procedure: recourse to a demonstrable being without confidence in the efficacy of the demonstration would seem not only futile but rather meaningless.

Now Berkeley's recourse to God, which is similar, is open to analogous criticism. The need for God's existence (apart from considerations of piety) is here chiefly explanatory, no other ground than God being available to account for an external world on the assumption that its being consists in being perceived. Matter is of no use (a) because it is alien to experience and (b) because its very conception runs counter to the law of contradiction. But if the *esse est percipi* is not to be surrendered as the true expression of empiricism, the solipsism it involves can be avoided only if God replaces matter as principle of explanation. Although Berkeley's argument for God's existence may appear as of analogy and surmise all compact, it is proffered by him as an argument following ineluctably from empirical premises and in conformity with rational postulates. And once God's reality is assured, trust in perception becomes fortified, faith in reason vindicated, and nature's laws may now with confidence be relied upon as evidencing divine intelligence and divine design. So both bishop and philosopher can rejoice together that God's in his heaven, and that the firmament showeth God's handiwork.

The steps or rather leaps by which Berkeley passes from solipsism to theism are familiar. The reasoning that leads from one to the other is not complicated: The priority of the "subject," which the *esse est percipi* implies, is supposed to be discoverable through introspection as a "self" endowed with the power to act, this power being synonymous with causal agency; this agency, though efficient internally, is without efficacy in the face of things

not amenable to control by the volition of the particular agent; the same causative action discerned by introspection must therefore be transferred, in anthropomorphic fashion, to a super-human self, unlike the human only in excellence; and nature's order and nature's necessity may thus be inferred as due to God's creative mind cognate with man's.

The flimsiness of this reasoning should not detract attention from the motives behind it, chief of which being the logical exigency by which Berkeley's position is confronted, namely, both to keep his method and to betray it. It is strikingly like the same logical exigency of the Cartesian position. By way of summary I submit the following few points of comparison:

1. Berkeley's predicament, like that of Descartes, results from the initially extravagant use of a singular method.
2. Berkeley's empiricism implies solipsism analogous to the solipsism explicit in Cartesian scepticism.
3. From the *esse est percipi* nothing can be made to follow, just as nothing can be derived from the *cogito ergo sum,* unless reason be accorded the autonomy requisite for making inferences and advancing arguments.
4. But reason's autonomy, so effectively destroyed at the outset by the sceptical method, is just as thoroughly undermined by the empirical.
5. From a position so anomalous Berkeley seeks to escape (through different and devious devices) by finding refuge in God, as does Descartes when involved in a cognate paradox.
6. Berkeley's argument for God's existence, comparable to one of the Cartesian proofs, is likewise prescribed by the need for causal explanation, although it is not the idea of God which Berkeley attempts to account for causally but rather our involuntary perceptions.
7. Berkeley's notion of causality, while differing from Descartes' in several respects, resembles his in being a rational principle, invoked for the purpose of understanding without contradiction the origin and order and design of the things perceived.

8. And though Berkeley contends that God's existence may be inferred from the nature of perceived things, God's own nature as thus inferred is hardly distinguishable from that which Descartes alleges to find by introspection, a being defined or conceived by traditional theology, a being eternal and infinite and immutable and omniscient and omnipotent, and so on, and of such a being there is in the nature of things, as attested by the empirical method, no evidence whatever.

And in the end, as with the Cartesian method of scepticism, so with Berkeley's empirical method, philosophic inquiry, presumably initiated and guided by such method, could accomplish nothing at all without turning a noëtic somersault, as it were, by reverting at every step to a prior faith in reason. This faith, alien alike to Cartesian scepticism and Berkeley's empiricism, is the very condition on which depend their inceptive formulation and putative validity. And if even those methods, though beginning ostensibly by repudiating reason, cannot dispense with the assumption of its primacy, then something very important may be said to accrue to the conception of the philosophic pursuit itself. This calls for careful examination.

Chapter III

PRIMACY AND PRIORITY

A comparison of Descartes and Berkeley, philosophers usually contrasted with respect to their methods and results, brings to light a primary commitment of the philosophic vocation: faith in reason, and especially faith in reason's principle of contradiction, is basic to every philosophy, whatever its special starting point or procedure or outcome. This faith, whether tacit or avowed, is an intrinsic condition of all cognitive discourse; discourse running counter to this faith, such as violates reason's primary principle, would seem to forfeit any claim to cognitive validity, though non-cognitive values might pertain to it in abundance. Cognitive discourse, we inevitably assume, is reasoned discourse; if any statement is submitted as credible, the least (though not the most) it must exhibit is conformity with the principle of contradiction.

If such a view may be said to receive some justification from our comparison of Descartes and Berkeley, then faith in reason is the very mainspring of philosophy, allegiance to the principle of contradiction being a primary earnest of this faith. There are undoubtedly other principles of reason on which the philosophic undertaking depends. What principles or postulates (using these terms here as if they were interchangeable) thought requires, and how their hierarchy is to be established, are matters falling within the purview of pure logic. With these we are not here concerned. Our chief interest is in applied logic, as it were, and when we examine the logic on which all philosophies rely for their discursive validity, we find that there is at least one principle which they presuppose for themselves and for one another, and this is the principle of contradiction. This principle, at any rate, remains

indispensable for all cognitive discourse, whatever else such discourse may or may not be able to dispense with.[1]

Now this is the principle, accepted on faith at the start, which directs and controls the arguments adduced by Descartes and Berkeley for many of their different tenets. Further comparison of the two philosophers would indeed disclose their acceptance on faith of additional principles of reason for proving in complete or systematic form their major theses. The principle of contradiction is, however, the guiding principle for denials and assertions fundamental to their respective methods of proof; as we have shown, some of their notions, whether argued for or argued against, would be meaningless without explicit avowal of the inviolable validity of reason's most indispensable postulate.

To disengage by a comparative examination of their methods what is equally primary for contrasted philosophies constitutes in a certain sense an inductive procedure, and the use of this procedure does not require prior defense of a special theory of induction. No science, for example, is called upon to establish the validity of the logic from which it derives its canons. The division of labor between the votary of a science and the logician is unavoidable if in subject or method or aim one domain of inquiry is to remain distinguished from another. This, of course, is obvious. The same division of labor is no less essential within philosophy. The separation of philosophy into several disciplines, sanctioned by tradition, illustrates the necessity of marking off the different lines of reflective activity. While some lines are not so sharp, as those between epistemology and metaphysics, others represent distinct boundaries. The difference, for instance, between logic and ethics is quite clear. The moral philosopher, though in need of logical criteria for his reasoned statements, is not concerned with a direct examination of the postulates or principles requisite for valid discourse; and the logician, whose preoccupation is precisely with the forms and processes of thought, does not as a rule claim to be conversant with the particular subject matter of ethics.

[1] The sense in which philosophic discourse is to be understood as "cognitive" will be discussed fully in later chapters.

This is said, though hardly new or profound, merely to remove the possibility of mistaking our present inquiry as an invasion into the field of logic. We are here dealing with the "law" of contradiction not for its own sake as it would have to be treated in a theory of logic but only as exemplifying an article of faith, so to speak, inherent in the philosophic enterprise. And if certain crucial views culled from two contrasted philosophic doctrines may be said to constitute a "fair sample" these views would seem to justify the inductive generalization, tentative as are all such generalizations, that faith in reason is the first requisite for defending the doctrines rather than the particular methods, whether sceptical or empirical, by which they are held to be established, since the very methods used for establishing them require prior faith in the principle of contradiction.

If the generalization here suggested is not invalid, the philosophic activity becomes meaningless or abortive when faith in reason is disavowed. This conclusion, as we shall see, is of great importance. At least one rational principle may be shown to be common to all the varieties of the philosophic effort, regardless of their incompatible procedures or incongruous results.

Consider once more Cartesian scepticism provisionally assumed as having universal applicability: such scepticism would be without sense or purport if not initiated in accordance with certain rules and criteria antecedently accepted on faith, and such scepticism would be completely sterile, culminating in an inescapable solipsism, unless faith in reason remains inviolable for the sake of making those valid inferences or deductions by which alone the universality of scepticism and the predicament of solipsism may be circumvented.

And consider also Berkeley's initial method for reducing by analysis the stable things perceived to the volatile perceptions of them occurring in a solitary mind. Here again such a method, if it is not to issue in egregious nonsense, presupposes faith in reason (a) for making the analysis intelligible as an argument for the priority of mind or spirit, and (b) for converting this analytical argument into a demonstrable proof for God's existence.

The very first step taken by either the sceptical or the empirical method, as well as every subsequent step, is possible only if faith in reason be invested with unconditional primacy, a faith the methods employed by Descartes and Berkeley can neither give nor take away.

For the sake of convenience I propose to designate by the term primacy whatever may be found to be equally requisite for all varieties of the philosophic venture. And faith in reason would appear to be such a requirement if no philosophy can eschew it and lay claim to intelligibility as a species of cogent discourse. The very disavowal of such faith, not as a groundless *ipse dixit,* but as a debatable thesis, could hardly be undertaken without compliance with the principle of contradiction. Negations as well as affirmations, if embodied in discursive form, must perforce be expressed in conformity with that principle. Thus primary is faith in reason, obedience to the principle of contradiction being a supreme profession of it, for even in flight from reason reason must be the wings.

I am aware of course that the adjective primary or the noun primacy may be used in different senses, and that primary and prior, or primacy and priority, are often confused, refusing to be kept neatly distinct. But it is not the linguistic issue that I here regard as of crucial importance. If in the present context I can clearly specify what I mean by primacy or primary I shall have done what my main purpose requires. My task is not a semantic one: lexicological considerations, though useful and apposite, are neither sufficient nor decisive in dealing with theoretical problems.

In speaking of the primacy of faith in reason, and of the principle of contradiction as primary, I have in mind a notion comparable to that of the *a priori.* I say comparable rather than synonymous, for the *a priori* is an archaic term and too recondite, and the many meanings the term has acquired, especially through Kant's use of it, are certainly bewildering. Nevertheless, the *a priori* is no negligible part of philosophic speech; though far from luminous, it is often an effective instrument of thought.

The term as here employed should be understood as having a limited sense. If I speak of faith in reason as *a priori* I wish the term to be taken as referring only to the cognitive sphere, whether scientific or philosophic, and not necessarily, as Kant taught, to all human experience prior to its discursive expression. The theory that all experience involves *a priori* forms is characteristic of but one species of philosophy. It may be opposed by an alternative theory. Yet the alternative theory, the product of a different philosophy, could not dispense with an *a priori* faith in reason requisite for its cogent articulation. The exclusion of the *a priori* from human experience, if carried out by argument or proof, clearly presupposes faithful adherence to those rational principles in accordance with which alone the validity of any proof or argument could be established. The use here made of the *a priori,* though cognate with Kant's, differs from Kant's in this important respect: it applies to every interpretation of experience, even to that interpretation which has adequate grounds for denying the presence in experience of any *a priori* elements. The particular interpretation of experience by Kant's critical or transcendental method is of course but particular and in competition with others.

Although the general sense in which the *a priori* as here introduced is not strictly Kantian, with respect to some specific features there is a close affinity between Kant's notion of the *a priori* and the meaning here given to the idea of primacy.

Without embarking on textual exegesis it may safely be asserted that, according to Kant, whatever is *a priori* has its source in the constitution of mind or reason. There are many candidates for the office of *a priori,* such as judgments, categories, schemata, principles, rules, axioms, postulates; we need not discriminate between them nor consider their hierarchy. We shall speak in an inclusive manner of these formal conditions of human experience without reference to the many ways in which their function is subtly differentiated on the several layers or levels of Kant's doctrine. And concerning these conditions we may note summarily the following points:

(a) To the conditions derived from reason pertain universality and necessity, and it is to such conditions that the contents or materials of experience are required to conform in order to qualify as objects of knowledge. (For our purpose it is not essential that we inquire whether the *a priori* nature of the formal conditions determines their universality and necessity or whether the exhibition of them as universal and necessary is proof of their *a priori* rank.)

(b) Because the formal conditions *are* universal and necessary, they must be regarded as the grounds of experience and not as its products: their validity consists in being indispensable presuppositions for all possible experience rather than inductive generalizations from selected samples of actual experience.

(c) And in this lies their so-called "deduction": *a priori* conditions determine the objective nature of experience which is the same as the experience of objects exhibiting unity and continuity, sequence and connection; for without these conditions, to whose functioning alone the things experienced owe their stability and order, experience would disintegrate into what, apart from the constructive exercise of thought, experience must be conceived as being, namely, a welter of sense impressions.

(d) But the principles of *a priori* construction (or the *a priori* principles of construction), conditioning the objective nature of experience, do not prescribe the specific contents to be constructed or the particular ways of constructing them. They only prescribe the ineluctable need of thinking by means of them, whenever we think at all or whatever we think about. (Causality, for example, derived from the hypothetical form of judgment, is a category in accordance with which events *must* be thought of as causally connected, any particular causal statement depending of course on *a posteriori* or empirical considerations.)

(e) It follows, therefore, that the basic categories prescribe rules for combining sensuous materials into an objective order without dictating or predicting the specificity of the order such as observation and inference alone can determine. The same categorial *Denkmittel,* so to speak, are compatible with any empirical asser-

tion made in conformity with them. (This may again be illustrated by causality which prescribes nothing except the principle that every event must have some cause, so that, in Kant's own words, "everything that happens, i.e., begins to be, presupposes something on which it follows." What is here *a priori* is the principle compelling us to combine events in a successive order and not any particular causal judgment. A specific causal judgment, in advance of the relevant evidence supporting it, is one which the causal principle can neither prescribe nor proscribe.)

This very brief excursion into such forbidding territory as Kant's theory of knowledge has for its aim merely to fix attention on a pertinent use of the *a priori* in connection with the nature of the philosophic vocation. The primacy that belongs to faith in reason, and especially to compulsory allegiance to reason's basic law of contradiction, without which no distinction could be drawn between cognitive discourse and non-cognitive, may be justified by means similar to those employed by Kant in his deduction of the categories. Faith in reason is a condition *a priori* of the philosophic vocation precisely as the Kantian categories are *a priori* grounds for the possibility of experience. Of this but a condensed statement must here suffice.

1. What constitutes the possibility of the philosophic enterprise is a question akin to that raised by Kant regarding the possibility of experience. Since the philosophic enterprise is a going concern, the question of its possibility can but refer to the conditions under which the enterprise is carried on. Of the material conditions (such as relate to the contents of philosophic thought) we shall speak later. Under consideration now are the formal conditions, of which the principle of contradiction is the supreme example. This principle is certainly *a priori* in a Kantian sense; to discard it in philosophic discourse is tantamount to logical identification of opposites, such as "yes" and "no," the line between sense and nonsense thus tending to become a vanishing line. To this principle every philosophy must conform if its method or result is to enjoy a validity logically assertable or certifiable. Whatever else may be said to determine *a priori* the possibility of philosophy, adherence to the

principle of contradiction is incontestably a universal and necessary condition for all cognitive claims put forward in discursive form.

2. This condition, though demonstrable inductively, so to speak, to be common to all the typical species of philosophy, is for each particular species an ineluctable presupposition, the ground rather than the product of its ratiocination, analogous in this respect to a Kantian category which, if shown to have *a priori* validity for all experience, can clearly not be regarded as mere generalization from some experience.

3. And the principle of contradiction, again in comparison with a Kantian category, finds its justification solely in being indispensable. A philosophy running counter to this principle must perforce run into a confusion of terms, a congeries of ambiguities, a nest of absurdities. Not to shun contradiction is to destroy the possibility of reasoned discourse.

4. The principle of contradiction resembles a Kantian category also in this, that it prescribes not the content but only the form of philosophic thought. The injunction to avoid contradiction is binding *de jure* upon every philosophic venture without predetermining the *de facto* tenets embodied in any of its versions.

5. Accordingly, the principle of contradiction, being indispensable for all philosophic discourse, is incompatible with none of its species, not excepting even those that culminate in the glorification of the non-rational or the irrational, provided only the glorification be asserted in propositions consonant with reason's basic laws. No particular philosophy (whatever its doctrine) is *a priori* precluded so long as its formulation accords with the *a priori* principle of contradiction.

Philosophy, then, to be philosophy at all, regardless of its special procedure or outcome, is on its formal side under the dominance of at least one principle the primacy of which is cognate with the primacy of a Kantian category. And this primacy is attested by the impossibility of denying the principle without affirming it. For to deny the principle (assuming the denial to

be expressed in provable form) is to presuppose it. And unless we do presuppose its validity for all cognitive thought, no hypothesis can be stated or inference made or thesis propounded, and scientific and philosophic discourse becomes indistinguishable from poetic or literary, in which contradiction may and indeed often does abound with no detriment to the aesthetic effect aimed at, and contradiction not only between ideas but also between images and emotions and moods.

It is of course not impossible to argue that philosophic discourse differs in cognitive import from scientific discourse, philosophy being chiefly vision or intuition or speculation, akin to poetry or religion, and hence equally free from the constraint exercised by the postulates of reason. Such a view, as already noted, *may* be argued for, and argued on cogent grounds, but *if* argued at all, the argument advanced would be without probative force unless couched in rational discourse. So I return once more to the primacy of the principle of contradiction, inviolable as it is in all discourse claiming to be cognitive, and any interpretation of the nature of philosophy, if expressed discursively in a form held to be valid, is undeniably a species of cognition. Philosophic knowledge may be concerned and not illegitimately with knowledge regarding itself. But this is a theme reserved for later inquiry when it will be relevant to distinguish between different kinds of philosophic subject matter.

The view here stated is tantamount to the assertion that the vocation called philosophy is inevitably a rational vocation; and no revolt against reason can impair the validity of the principle of contradiction if voiced in a form intended to solicit philosophic assent. With reference to this principle alone (and not to speak of any other) the dictum may be hazarded that what is not rational is not philosophical.

The dictum is not weakened by the fact that the principle of contradiction itself is beyond proof. It is beyond proof, to reiterate an earlier contention, simply because discursive proof of anything rests on the necessary presupposition of its validity. The primacy of the principle can be justified only by faith: no logic can under-

write its validity without assuming the validity to be underwritten. Yet faith in reason is not blind or groundless, for in its indispensability lies the source of its ultimate authority, but an indispensability chiefly in relation to certain species of discourse. As there is no reason for logic but only for the necessity of the conditions stipulated in advance on which its possibility depends, so, and *a fortiori,* there is no reason for the necessity of the philosophic activity, its gradual decay or complete cessation being always conceivable. But *if* philosophic activity is to be carried on (and this of course holds of scientific activity as well) the activity is possible only as a rational activity, i.e., as an activity conditioned by certain *a priori* principles, pre-eminent primacy, so to speak, belonging to the principle of contradiction. There is no rational compulsion to engage in rational discourse; once we embark on it, however, we are bound, and bound *a priori,* by the postulates definitive of discursive rationality. Here again allusion to Kant is pertinent. Just as for Kant there is no necessity for experience but there is only a necessary element within experience if experience is to be possible at all, so, in our analogous case, necessity pertains to the conditions requisite for the pursuit of philosophy and not to the pursuit itself.

This pursuit, then, though not logically compulsory, is under logical compulsion, whenever initiated, to proceed in accordance with such *a priori* conditions as are determinative of its possibility. And the principle of contradiction is the rational presupposition *par excellence* to which all the varieties of philosophic thought are equally amenable.

The principle of contradiction, possessing as it does a generic primacy, does not enable us by its means alone to distinguish between one species of philosophy and another. What is specific about a philosophy is not determined merely by adherence to presuppositions acknowledged generally and of necessity. One philosophy is differentiated from another by its chosen method and diction, its selected data and problems, its special angle of vision and interpretation, its major concepts and central tenets.

And for its own ways, whether procedural or linguistic or interpretative or categorial or doctrinal, every philosophy tends to claim a favored primacy, the result being that ways held as primary by one philosophy are notoriously not so viewed by another.

To obviate confusion between the generic and the specific, I propose to use the term priority for whatever may be asserted to enjoy supremacy within a particular philosophy, reserving the word primacy for subsuming under it the conditions requisite for any and every philosophy. This is just a convenience of locution; other expressions might do just as well to make clear the distinction I have in mind.

One important point I wish to accentuate is this: What is primary in the generic sense can be confronted by no alternative; the specifically prior always runs into opposition and rivalry. There is, for example, no choice for philosophic thought between the principle of contradiction and some counter-principle. It is obviously not impossible to choose not to conform to this principle but so to choose is to withdraw altogether from participation in the life of philosophy. A suicidal course, a preference for death or *Nichtsein,* in a literal or figurative sense, is never precluded, and many a quasi-philosophic movement, flagrantly denying the claims of reason, must perforce end in nihilism. The principle of contradiction is without a genuine alternative only on the supposition that the aim of philosophy is not deliberate self-annihilation, the absence of such an alternative being the criterion of its generic primacy. But it is otherwise with a specific priority upon which a particular philosophy depends for its characteristic features, be the priority one of method or language or perspective. Free choice among competing priorities, so to speak, and competing as real alternatives, is certainly possible, and hardly to the disadvantage of the philosophic enterprise itself which seems to flourish equally in all its rival species.

The question of priority in connection with philosophic method is still an open one, and the debates concerning it form an integral part of philosophic thought. For what method may the claim to supremacy be made? To this there is as yet no consentient answer.

Not infrequently, indeed, a particular philosophy will endow with a privileged priority the method employed in its own construction; and an alternative method, in the service of an alternative philosophy, then becomes depreciated as inadequate or invalid. No particular philosophy, however, can legislate for another, ruling it out of court on the ground of following a different procedure. What are the standards of a methodology both necessary and sufficient, and whence their authority? And if a method exists for settling the issue, would it not, in its own context, be required to raise or to beg the question of priority? Here it is but needful to remark that the question of priority with reference to philosophic method has received, and will probably continue to receive, different answers by the different votaries of the philosophic undertaking.

We must postpone for a moment dilating further on the question of priority in relation to competing methods. For the present we must recognize the fact that they *are* competitive, whence the legitimacy of methodological freedom, so to speak, inherent in philosophic inquiry. Choice of a method for a specific philosophy is a deliberate choice. Whatever compulsion a chosen method exercises upon the aim and direction of philosophic inquiry, and whatever be the precise nature of that compulsion, the decision to adopt this rather than that method seems at first sight to be optional. As no logic compels a man to engage in philosophic inquiry, so no logic can coerce his selection of a particular method. And optional also, depending upon the method followed, would appear to be the special manner or the special order in which a given inquiry is pursued. What is prescribed by one method can obviously not be carried out by another: a semantic mode of procedure differs from a dialectical or an analytic from a synthetic.

Methodological freedom, as here adumbrated, is of course no more absolute than any other kind of freedom, its limits being twofold: (a) Choice of a method for any species of philosophic discourse must accord with the generic primacy pertaining to the principle of contradiction (and any other principle of similar

primacy); (b) the method selected must determine the processes necessary for the prosecution of the inquiry in question. Another inquiry by another method will naturally require different operations and different uses of them. In other words, although the philosophic enterprise is a free enterprise, its freedom is controlled by the universal conditions presupposed for all cognitive discourse as well as by the special conditions to which a chosen method is subject. There is control exercised also by the data selected for philosophic inquiry. This, however, is a theme reserved for later consideration.

The notion of priority is a complex one, and when applied to a method of inquiry, its meaning is not always clear. There is, it is hardly necessary to mention, no priority as such; some qualifying adjective generally specifies the sense in which the noun is to be understood. From the context, at least, it may often though not always be gleaned whether priority is to be viewed as psychological or temporal or causal or logical (or definable in some other way). Kinds of priority are many and different, and whether one precedes another, and in what sense, is a major issue. But this need not concern us here. Assuming the possibility of various sorts of priority, whatever their putative hierarchy, what sort does a method of inquiry possess in relation to the result achieved by its means? May we speak of the method as "generating" the result, and if so, is the generation like that of events or of propositions? If the method is antecedent to the result, the result being held to follow from the method, is the method a causal or a logical antecedent?

In view of the notorious ambiguity of the term "antecedent," conducive as it is to the confusion of causal with logical priority, or to the reduction of one to the other, for the purpose of the present discussion we shall regard a chosen method as conditioning a philosophic product more in a logical than in a temporal sense. Whatever the method by which a philosophic inquiry is instituted —whether sceptical or empirical, semantic or phenomenological, analytic or synthetic, mathematical or pragmatic, intuitive or dialectical—that method, by the rules laid down for its employment,

determines what will ensue from a consistent application of it. So if the method chosen is interpreted as the logical antecedent, the logical consequent will then be the theory or doctrine assumed to follow with necessity from this method and from no other. An inquiry prosecuted, for example, by a semantic procedure will arrive at a conclusion quite different from the conclusion reached, let us say, by the phenomenological. In selecting a method we are indeed bound to follow whither it leads. Yet, and this too must be noted, no method is without a preëstablished harmony, as it were, with what can be achieved through its agency; the choice of a method, therefore, seems to commit us in advance to certain predetermined results because they are results not obtainable except by a method specially adapted for obtaining them.

But as thus stated, the relation between method and result would appear to be essentially circular. Unless we suppose the choice of a method to be a choice made at random, the pre-visioned result having no influence whatever on the decision, we can hardly maintain, on either psychological or logical grounds, that a given method possesses unequivocal priority over the result it achieves. The interdependence of ends and means discernible in the domain of practice has its analogue in the theoretical disciplines. An investigative procedure, whether in science or philosophy, is relative not only to the subject investigated but also to the aim prompting a certain investigation. The conception of an inquiring mind as if it were a *tabula rasa* is clearly a hypothesis contrary to fact; it is fantastic to assume that the votary of any discipline embarks on his special task unaware beforehand of what he seeks to accomplish through means so deliberately chosen. Nothing but the envisaged result can justify a preferred mode of procedure, and, conversely, nothing save this mode of procedure can produce the end sought. From this circle no escape is seemingly possible. And if means and end are thus mutually implicative, it is clearly legitimate to think of each as prior to the other.

If it appears paradoxical to speak of the end of a philosophic inquiry as having priority over the means selected for obtaining it, the paradox is one generally inseparable from the relation of

means and end involved in any purposive activity, being in fact the paradox latent in the notion of final causes.

The exclusion of such causes from nature may or may not be justified, depending on the particular philosophy adopted in settling the issue, but to volitional products of human contrivance causes called "final" are undeniably applicable. We should be hopelessly blinded by prejudice if we could not look upon works of art as typical examples of teleology. And the question of priority becomes particularly significant in relation to final causes. The notion of the priority of an end, absurd though it is when understood in a temporal sense, is unexceptionable if construed as having a logical meaning. While priority of time obviously belongs to purposive action, i.e., action directed towards a goal, logical priority must be assigned to the conception of the goal, for such conception alone can determine the particular course of action required for the purpose of reaching the goal. Without reference to a final cause it would be difficult if not impossible to define or describe any mode of human action as significantly purposive.

This altogether too brief allusion to the theme of final causes is intended merely to intimate the sense in which philosophic activity may be viewed as teleological: it is an activity in which men are deliberately engaged for the sake of attaining certain ends. And though the ends sought are said to be cognitive, they require, as do non-cognitive ends, means freely adopted for achieving them. Cognitive activity is a species of purposive activity. As a purposive activity it is under the direction of final causes. And if cognitive activity is purposive, it too involves the circular relationship of means and end, logical priority pertaining to the end.

Clarification of this view demands some expansion of a few salient points.

The general assumption that a specific philosophy follows from a particular method of inquiry, analogous to a logical consequent following from a logical antecedent, may now be seen to require qualification. It is indeed true that in the *development* of a philosophic position through a chosen method statements or proposi-

tions are advanced in a certain sequence and concatenation upon which the demonstrative force of the position depends. But in what sense is a position generated by its method? The word "generation" is misleading unless understood as not too felicitous a name for the act of producing the progressive order and connection of the assertions through which a philosophic position receives its articulate form. It is but in relation to the articulated position that the method enjoys priority; in the process of its articulation, some discursive parts must of necessity precede other discursive parts, whether as definitions or premises, and for the exposition or proof of any of its theses a logical procession of antecedents and consequents is obviously required. Priority in this sense, and in this sense alone, belongs unquestionably to any method of inquiry in relation to the finished cognitive product, since the product owes its elaborate completion to the antecedent operations prescribed by the method.

But the teleology of the inquiry attenuates, as it were, the priority of its methodology. A philosophic position, said to be generated by a chosen method, has an incipient or pre-formulated phase, foreshadowing the sort of fruition made possible by the very method chosen. From this circle there is no egress for an activity strictly purposive; the philosophic activity, unless we think of it as proceeding in accidental or driftless fashion, provides a signal illustration of this circle. Arguments for a philosophic position presuppose the position for which the arguments are adduced. The position assumed in advance of proof determines as final cause, so to speak, all the conditions requisite for its discursive validation, and makes possible the justification of certain choices—notably, the choice of relevant data, the choice of an appropriate language, the choice of basic categories, the choice of an adequate mode of procedure, the choice of an effective plan of construction. It is the priority of a philosophic position, present as vision or intuition or persuasion, which in general accounts for the design or structure of a philosophic formulation.

The various choices mentioned (and many others), which every philosopher must make, are not haphazard choices. They serve

a purpose, the purpose being to articulate and validate the position held antecedently. The choice of a language is particularly instructive, and a parenthetical remark on this theme may throw further light on the teleological nature of the philosophic enterprise.

Linguistic freedom, being part and parcel of methodological freedom, is limited in the twofold way suggested earlier. Any language selected must in its use accord with the principle of contradiction and must furthermore be properly adapted to the purpose for which it is intended. Can we speak of a language as prior to the philosophic position it serves to formulate? A universal language, univocal in meaning, may yet be invented to be enjoined upon all philosophers regardless of their procedural or categorial or doctrinal or any other divergences. But it is rather utopian to hope that, though philosophers will always find different things to say, they might succeed in conveying them through an identical vehicle. To be sure, were the same canonical diction available as a neutral medium for expressing all philosophic positions, however incomparable or incompatible, such diction would indeed have incontestable priority in relation to their unformulated phases. No such language, alas, is in existence at present; and it is safe to assert that an ingenious language of this sort if ever devised would possess but a specious neutrality, for it could make its appearance only under the auspices of a particular theory of meaning and communication. Lack of linguistic uniformity may or may not be a scandal, but advocacy of a single artificial language as the universal medium of philosophic expression can find no justification except in terms of a special doctrine.

Be that as it may, however, the discordant forms of utterance philosophers have hitherto employed actually represent technical devices expressly adopted in relation to ends to which they alone are singularly adapted. The philosophic position entertained prescribes the particular mode of its utterance, the position being logically prior to the idiom in which it is couched.

The term idiom, introduced advisedly, is specially fitted to indicate the nature and intent of a philosophic language. The diction of a philosophy is idiomatic in the sense of being peculiar, and

peculiar inevitably because it serves to make manifest a peculiar position. To translate the language of a given philosophy into the locution of another is not simply to substitute one convenient medium of expression for a slightly different vehicle; such a translation is in effect tantamount to a radical transformation of one theory or doctrine in terms of its rival, for the linguistic idiom of a philosophy voices unalterably the distinctive persuasion with which it is saturated.

I shall revert later to the contention that a philosopher's language derives its idiom from the peculiarity of the position held prior to its expression. A particular terminology often so completely tallies with a given position, out of which the terminology may be shown to grow, that a different terminology would not only distort but could entirely falsify the position. The languages called "phenomenalistic" and "physicalistic," for example, are idiomatic in my sense; they are irreducible precisely because the position which each language is designed to articulate has a peculiarity that would dissolve into nonsense if rendered in terms of the other. One might as well, to use an analogy drawn from the arts, speak of a sonata as coated with certain pigments or of a portrait as being voiced in a particular key. In philosophy, linguistic substitutions are feasible only when the positions expressed are amenable to interchange. Such interchange, however, though logically not precluded, depends largely on non-logical or extra-logical factors, and chief of these are the requisite data chosen as basis for a specific inquiry. But this is a theme which will occupy us in the sequel.

That a philosophic position is prior to the method and language of its articulation may be briefly illustrated by alluding again to the contrasted views of Descartes and Berkeley.

How vain the attempt to establish the priority of the sceptical method in relation to the Cartesian position! If we assume the Cartesian position to be the position of rationalism, universal doubt, under the conditions laid down by Descartes for its application, can obviously not serve to justify that position. Such

doubt, if taken seriously, undermines irremediably any antecedent faith in reason, and if entertained playfully, faith in reason must be presupposed for the very possibility of its exercise. The certainty of the *cogito ergo sum,* asserted to be derived from doubt itself, requires for its derivation specific acts of thought, and acts that must have an initially indubitable validity if doubt is to perform the function Descartes assigned to it. So if rationalism is here the cardinal position, it is emphatically not a position that can be founded on the sceptical method, doubt itself being a strange excrescence of that position; quite to the contrary, the method is prescribed by the desideratum to develop deductively, in emulation of mathematics, a connected series of statements or propositions from some original premise alleged to be absolutely self-evident. Clearly, the rationalistic position of Descartes, inspired by geometry and arithmetic, is prior to the method by which it is thought to be deducible or demonstrable.

All Cartesian persuasions, articulated within the general framework of rationalism, determine the manner of their proof. It is possible, for instance, that in the process of setting forth the necessary implications of universal doubt, Descartes made the surprising discovery that of the existence of self-consciousness, and of nothing else, can scepticism at the outset give indubitable assurance. This, as I say, is possible but scarcely tenable. It seems more probable that Descartes employed the method of doubt for the very purpose of demonstrating his antecedent persuasion of mind's unique reality (the reality of a *res cogitans*) in distinction from that of the body (the reality of a *res extensa*), the dualism of mind and body being another prior persuasion that required apposite and ancillary procedures.

The Cartesian language, which is an integral part of his methodology, is closely adapted to the philosophy it expresses and communicates. Indeed, no other language could have realized his intention. His use of substance, for example, is strikingly idiomatic, serving to formulate the dualistic position peculiar to the system. If mind and body are independent and co-equal substances (and co-eval as well, for there is no reason for supposing

their non-simultaneous creation by God) each will naturally require a definition or description in terms of a separate idiom. And so, one diction is needed for the *res extensa* and another for the *res cogitans*. Descartes might be said to have cast his philosophy in polyglot form: the geometrical and physicalistic dialect is prescribed for the one kind of reality, the introspective and phenomenalistic for the other. With equal ease and propriety (depending upon which substance he proposes to articulate the nature of) Descartes can employ the speech of mechanism and of teleology, the vocabulary of naturalism and of idealism. Nor is the vernacular of theology ignored when his purpose demands it. A language other than the Cartesian, one less richly varied, would certainly be alien to a position so radically dualistic. It is utterly useless, we may observe in passing, to attack the language of a philosophy after the manner of our belligerent semanticists and positivists: the fire is misdirected because the language is inseparable from the philosophy. Opposition to a doctrine or theory as embodied in the language peculiar to it is, of course, another matter.

The Berkeleyan position, too, determines the procedural and linguistic ways requisite for its development. The position of empiricism, initially assumed, dictates the rejection of everything not reducible by analysis to sensible qualities immediately perceived. Compressed in the formula of *esse est percipi* are all of Berkeley's denials; they follow with necessity from the method chosen for the defense of the basic position. The method prescribed by the empirical position effectively proscribes the existence of material substances, material causes, abstract general ideas, primary qualities as divorced from the secondary. But, alas, by this method alone nothing positive can be asserted except the existence of a solitary mind with ideas as its only objects.

Berkeleyan and Cartesian solipsism have a cognate source: they arise from a criticism of knowledge too radical in its original application. When all is swept away that can be negatived, whether by the sceptical or the empirical procedure, nothing remains secure but a conscious being, engaged in thinking or per-

ceiving, merely aware of the contents of its consciousness and of itself as their supremely real subject. The escape from solipsism, as observed earlier, can be accomplished only with the aid of arguments involving reliance on the principle of contradiction, a principle that must possess for Descartes a pre-sceptical and for Berkeley a pre-empirical validity. Accordingly, as initially employed, the empirical method, no less sterile than the sceptical, is useless for the purpose it was designed for.

The ultimate abandonment of strict adherence to a procedure that could but culminate in the impasse of solipsism simply accentuates the priority of the envisaged result over the method adopted for its achievement. Neither Descartes nor Berkeley ever relinquished his preformulated basic persuasions; what each surrendered was only the provisional or inchoate arguments adduced in their favor. The very philosophy which demanded the experiment with an extreme starting point demanded also its subsequent reversal: repudiation of radical sensationalism (inherent in the preliminary statement of his empiricism) became for Berkeley imperative precisely as recantation of universal scepticism became necessary for Descartes.

The theistic position to which Berkeley was originally committed called for two separate methods—(a) the method of analytical reduction and (b) the method of conceptual construction. The function of the former is to supplant materialism by mentalism or subjectivism, of the latter, to invest with a spiritual meaning the notions borrowed from materialism, such as substance and cause. The combined result of the two methods is a new version of the external world. Although comprised of ideas, the world now loses its taint of solipsism and anthropomorphism, and emerges transfigured as the system of created things bearing the impress of God's will and reason. Actually, as already pointed out, the two methods are at loggerheads: from the method of reduction nothing follows but the substitution of the volatile sensations of a solitary psyche for the stable things publicly perceived; and by the method of construction theism can be established, if at all, only

by exchanging the empirical procedure for one based upon an *a priori* faith in reason.

And the terminology clearly reflects the methodology. Berkeley's language, so different in idiom from Descartes', is in accord with the peculiarity of the position it is intended to express. His diction is principally phenomenalistic, adapted to the needs of the method of analytical reduction, and when he uses the physicalistic dialect, it is chiefly for the purpose of reducing it to absurdity. (But the artist in Berkeley was constrained on occasion to sacrifice consistency to the claims of the dialogue form: his Hylas, for example, by arguments stated with impressive cogency, almost persuades one to embrace materialism.) Berkeley's is indeed the authentic voice of experience, but the experience evoked is drawn from introspection whose objects are mental events or "ideas." The linguistic vehicle called "empirical" is primarily suited to convey the reductive elements of analysis. It is only by courtesy that the label "empirical" can be applied to a vocabulary transcending the simple and isolated data of sense, the vocabulary employed, for instance, in inference or induction or proof. Berkeley's logic is thus essentially paradoxical: his nominalism must be phrased in terms of immediate experience, but if so rendered, nominalism ceases to be logic, in the sense of providing general rules or adequate criteria for probative discourse.

As in his method, so in his language, Berkeley was inevitably driven to abjure his initial and radical empiricism; the diction required for stating the truth of his theism represents, as it were, an epicene species, neither that of pure sense nor of pure thought. His vernacular was ill adapted for the task (such as Kant was later to embark upon with a new method and an appropriate language) to exhibit the indissoluble union of the sensible and the intelligible. And if the Cartesian philosophy, because of its basic position, required a polyglot formulation, the Berkeleyan, owing to its original commitment, could not avoid means of expression essentially hybrid.

The brief comparison of Descartes and Berkeley was but intended to show how indigenous, so to speak, to a philosophic

position are its method and language. No method can replace another in reaching a desired result; in similar fashion, for a given language (if judged in relation to the end it is to serve) there can be no adequate substitute. Imagine Berkeley's position in Cartesian or that of Descartes in Berkeleyan dress! The idiomatic character of a philosophy, the peculiarity of its procedure and diction, is unalterable; a change in idiom is tantamount to change of position.

It is time now to revert to the question of priority in relation to competing philosophic positions, each idiomatic in the sense indicated. How is it possible for one position to take precedence over another, not in terms of temporal origin or causal influence, but in terms of logical validity or material truth? In one form or another the question will recur throughout our inquiry. We can broach it at present in but a cursory fashion, for involved here is the problem of philosophic subject matter of which a discussion is still pending. Obviously, cognitive claims made in behalf of a philosophic undertaking can mean nothing without reference to the relevant data.

We shall note later that different philosophies do not address themselves to identical data; and even though the data selected be the same, conflicting interpretations of them are bound to ensue from the disparity of method and language inherent in philosophic inquiry.

The question of priority would scarcely arise if in procedures or diction the philosophic enterprise were not so variable. Philosophy is a genus of many species. The distinct cognitive value said to belong to each is not relative, as it is in a given science, to a subject matter entirely its own. Unlike science, philosophy cannot be neatly divided into separate and non-competing domains of specialization. So if one species of philosophy is asserted to be prior to other species, not in a temporal or causal but in a logical or cognitive sense, what precisely is the meaning of such an assertion?

That one philosophy is prior to all the others, to hazard a

provisional statement, may mean either (a) that the area chosen for exploration exceeds and includes the areas of its rivals, or (b) that the method and language adopted for its articulation possess exclusive adequacy.

With the full import of these two possible interpretations of priority we must deal hereafter and at some length. They will be found to entail crucial difficulties. A very brief anticipation of some of them may meanwhile serve to bring the issue into focus.

The claim to priority by or for a given philosophy will be shown to involve a number of related fallacies, chief of which is undeniably the fallacy of confusing species and genus. No philosophy, be it ever so universal in reach or conclusive in proof, can relinquish its diagnostic character or biased approach. It is extravagant indeed to assume that any philosophy could achieve unique catholicity by absorbing and transcending all its possible rivals and thus become the only true exemplar of philosophic thought. Philosophy has been embodied in many forms; to declare but one to be genuine, and all others either spurious or only partial expressions of it, is to maintain that a given species illustrates and exhausts the entire genus, a fallacy appearing in human affairs under many and different guises. The most elaborate synthesis produced, assuming the achievement of synthesis to be the sole function of the philosophic enterprise, can never escape being a synthesis of a special kind, special in method and special in language, and other kinds no less synthetic but obtained by different means are never precluded. As the history of thought so patently reveals, one species of synthesis can be always matched by another.

Nor can the difficulty mentioned be evaded if we identify philosophic activity mainly with the analytic activity. There is more than one way of skinning a cat: parts or elements dissected by one procedure are not equivalent to those disjoined by another. Like synthesis, analysis may be used differently and for different purposes, and to hold that a special use preëmpts its total meaning is to confuse anew the specific with the generic. It is the same

fallacy whether priority is attributed to a particular analytic or to a particular synthetic philosophy.

The fallacy of confusing species and genus may be restated more precisely as the fallacy of mistaking priority for primacy. As we chose to employ it, the term primacy applies solely to what is indispensable for the possibility of philosophic thought, and thus for the possibility of any of its species: such primacy we found to be exemplified by the principle of contradiction. As regards the primacy of this principle, no species of philosophy can claim advantage over any other. The principle, exacting obedience from every formulated position, favors none and excludes none. Being a generic condition, it governs every philosophy, not excepting even that species which argues against its necessity, since the argument *as* argument presupposes the very necessity disavowed. All discursive argument, whatever the content, is logically absurd if it contravenes the principle of contradiction.

Primacy can, therefore, not belong to a philosophic position in the sense in which it pertains to the principle of contradiction. No philosophic position, though under compulsion to conform to the principle, can claim exclusive possession of it. If any philosophy could be shown to have a monopoly of the principle, such a philosophy would *ipso facto* have the privilege of being the sole example of the philosophic enterprise. Such an anomaly may be avoided by maintaining the distinction between priority and primacy: priority of a philosophic position must be understood as immanent within it, serving in teleological fashion as final cause in relation to the means requisite for its development and articulation. The notion of priority as transeunt, so to speak, signifying the priority of one particular position over others, implies the assumption that one species can exhaust the genus of philosophy or, which is the same fallacy in another form, that it alone can monopolize the principle of contradiction.

Further details are out of place at this juncture of our discussion. A word, however, should be said to indicate the consequence that would ensue if priority and primacy were not kept

distinct in the manner proposed. The consequence can be stated very simply: we should have to consider as *a priori* not what renders philosophic activity possible but a concrete and unique example of the activity.

For whatever is endowed with primacy, as we contended, precludes alternatives, and being without rivals, it is ineluctable and universal. Such is the primacy pertaining to the principle of contradiction, the supreme postulate of all rational discourse. But when the claim to primacy so conceived is transferred from discourse to the positions embodied in it, and especially such as may be shown to be equally free from self-inconsistency, the claim becomes paradoxical in the extreme. Of philosophic positions we may always and legitimately speak in the plural: there is no position without its actual or possible antithesis; there is no position singularly or exclusively incontrovertible; there is no position evincible as true *a priori,* true, that is, without reference to the particular subject matter it is held to be the interpretation of.

The fallacy of confusing species and genus, or the cognate fallacy of mistaking priority for primacy, may be restated in terms of yet another, namely, the fallacy of suppressing an irremovable correlative. This, calling for attentive examination, must here be touched upon rather lightly.

Any term of discourse can of course be always distinguished from its correlative, since every x (whatever it may be that x symbolizes) implies a non-x as its contrary or contradictory. The significance of x is necessarily bound up with that of non-x, and any term would seem to lose its specific meaning if it could not be contrasted with its opposite. Can we abolish the contrast by ascribing meaning to only one of the correlatives? It is a practice not at all uncommon to invest certain epithets with exclusive meaning and to curtail or annul the meaning of their opposites. The history of thought reveals the attempt by not a few philosophers to affix to the nature of things certain characterizing labels, such as good or evil, mental or physical, purposive or mechanical, eternal or temporal, the correlative of each disappearing altogether or surviving only as part or species of it. Whenever, there-

fore, significance is preëmpted for but one of a set of contrasted terms, the fallacy of suppressing an irremovable correlative makes its appearance.

The claim made for the priority of a philosophic position, when priority is mistaken for primacy, affords a signal illustration of the fallacy. Indeed, any position, since it requires to be defined by one set of predicates or another, involves the tendency to ascribe to the defining set a privileged meaning, the correlative set either remaining meaningless or becoming somehow assimilated. Consider any philosophy distinguished from any other by a descriptive name. How enlightening it would be to discover whether such a philosophy attaches to correlative names the meaning they have for its rivals as designations of their own respective positions!

In debates over methodology, when the question debated is one of priority, the fallacy noted, though often concealed, is quite prevalent. The demand that *all* philosophy follow but a single method or speak a single language, whence can it issue if not from a *particular* philosophy? Opposing philosophies might likewise (as indeed they actually do) voice the same demand in support of the different procedures or idioms more congenial to them. Such conflicting demands would seem to be inevitable if philosophy be regarded as a genus of diverse species, and so long as equality of meaning to which genuine correlatives are entitled could not be validly impaired. As a matter of historical fact, scarce any mode of procedure or diction has been championed by some votaries of philosophy the opposite of which has not been defended by others. This is hardly surprising, seeing that the philosophic enterprise is a free enterprise, limited only, on the one hand, by the formal and generic conditions determining its possibility, and on the other, by a given subject matter with respect to which alone a specific philosophic achievement may claim to be a cognitive achievement.

So we come at last to the central part of our inquiry. How, it will be asked, can the philosophic enterprise be both cognitive and free? If cognitive, must it not be bound by the subject matter

given for exploration? But, then, what precisely is a philosophic subject matter?

To these and similar questions a detailed examination will have to be devoted. Here, by way of transition to the next chapter, the following brief statement must suffice.

There is one sort of subject matter, peculiarly the philosopher's own, which for want of a better term we shall speak of as reflexive. Philosophy, being so often concerned with itself, is the most "self-conscious" of disciplines. So self-exploratory is this discipline that preoccupation with its own nature and function, its own presuppositions and criteria, its own methods and expressions, its own problems and aims, constitute a singular field of investigation. If we mention illustratively such themes as the meaning of meaning or the method of method or knowledge of knowledge or inquiry into inquiry we indicate tersely a reflexive area of cognition. Indeed, this self-inspection and self-criticism on the part of philosophy appears at certain times and in certain quarters as if it were the sole species exemplifying the genus. Philosophy about philosophy, so to speak, is no misnomer; it denotes a cognitive province in which the object and the subject of inquiry are the same. There is no analogue elsewhere of a discipline that can draw from itself its chief contents and furnish about itself its major tenets.

Now science about science, if the phrase were hazarded, would be generally regarded as a figure of speech. A science about itself would seem to be a stranger in the family of disciplines restricted to specific and external phenomena. Unlike the philosophic enterprise, the scientific includes among its proper functions none that impose the need or demand for self-analysis or self-valuation as a separate sphere of cognition. But unlike science, philosophy does embrace as an essential part of its activity conscious scrutiny of its own activity.

But the reflexive is only one of the areas of philosophic inquiry. Philosophy has always claimed to afford knowledge of objects belonging to non-reflexive regions. It is in this sense that philosophy is cognate with science, the effort it exerts being turned upon

the nature of outer things rather than upon its own inward nature. If so, what is the relation of philosophic to scientific subject matter? Are they separate or are they continuous? If "objective" knowledge is what philosophy aims at, how is it to be understood as neither duplicating nor superseding scientific knowledge?

The task of dealing with these and a host of related themes lies ahead.

Chapter IV

REFLEXIVE SUBJECT MATTER

Is there a problem more crucial for philosophy than the problem relating to its subject matter? What is philosophy about? What are its objects or objectives? Is it cognitive in the sense in which science is held to be so? Has it for its content special themes not amenable to exploration by other disciplines? Are the many philosophies, like the different sciences, distinguishable primarily by their preëmptive data? And if reference to separate data marks the boundary between one philosophy and another, why are philosophic disagreements so unlike scientific in exemplifying singular obduracy?

These are but random questions illustrative of the difficulties inherent in the philosophic undertaking, the major difficulty centering about its cognitive claims. For if philosophy were essentially non-cognitive in intent, the issue concerning the relation of philosophic and scientific subject matter need not—indeed, could not—arise. The issue becomes significant precisely because philosophy has generally always professed to discharge a cognitive function. Of what, it must emphatically be asked, can philosophy furnish cognition differing in kind from the cognition afforded by science?

It is no easy task to discuss impartially the issue of philosophic cognition if in raising it we think of science as satisfying the cognitive interest exclusively and exhaustively. Now science, as must be conceded, is a general name for diverse disciplines, each representing an autonomous domain of specialization. The problem of the unity of science does not as such fall within the province of any particular science: no science can determine its

connection with any other by procedures adapted chiefly to its own domain of specialization. The concatenation of the sciences is not a subject open to inquiry by the scientific method nor can such concatenation form an integral part of the specific content by which every science is distinguished from every other. The nexus of astronomy and bacteriology, for instance, if such can be established, is clearly not a phenomenon either astronomical or bacteriological explorable by modes of procedure followed by the two sciences in the study of their respective phenomena. Be the unity of science what it may, *prima facie* at any rate, the unity is not one of subject matter. It is hardly necessary to call attention to the actual division of the sciences in accordance with their separate objects of inquiry. Although we may speak of them as being equally concerned with the nature of things, the sciences are plainly not concerned with the same things of nature.

To the unity of science we shall in the course of our discussion recur again and again. It is a unity, as we shall find, susceptible of more than one interpretation. But however their unity be envisaged, the sciences represent distinctly plural and highly diversified fields of study; each, identified as it is with a special field, does not generally encroach upon any other. In the effective pursuit of knowledge the differentiation of the sciences is certainly and notably all-important, and to this differentiation, therefore, we must give our attention first.

If the sciences presuppose partitioned areas of cognition, each science sovereign, so to speak, within its own domain, and none in conflict with any other, the contrast between science and philosophy would seem too great to justify ascription to the latter of a comparable cognitive function. Scientific knowledge is embodied in separate spheres which, though often concentric, avoid collision because the subject matter relative to them is essentially heterogeneous. In speaking of "scientific knowledge" we employ an elliptical expression: the knowledge we have in mind is of different ranges of phenomena by a certain method, there being no scientific knowledge of nature as a whole but only of those segmented areas of nature that give to the various sciences their local

habitation and name. If asked what science affords knowledge *of,* the answer must clearly indicate a segregated group of phenomena, such as stars or organisms, whence the sciences of astronomy and biology; a science not referable to a distinct class of phenomena would be one without a subject matter and thus without meaning.

Now the various philosophies are admittedly not cognitive in the same sense; unlike the sciences, they cannot be differentiated with reference to separate areas of phenomena, and not being thus differentiable, their labor of inquiry does not involve a similar division of labor. "What one science does cannot be achieved by another"—this dictum will scarcely be gainsaid. The work of geology is not such as can be undertaken by physiology, and *vice versa;* each is a particular discipline concerned with its special phenomena. For this there is no analogue in philosophy: what one philosophy is concerned with is the concern likewise of another, none capable of occupying a field free from invasion by rivals. Whatever the boundaries between contending philosophies, they are not, so to speak, "territorial" boundaries, one philosophy exercising cognitive jurisdiction over one part of the world, and another over another. Cognitive jurisdiction of a science is precisely of this sort; its claim can extend only to a delimited region of nature. Philosophic jurisdiction presupposes no such delimitation: the claims made are intended to be global in reach, and they cannot be readily challenged without calling in question the cognitive function of philosophy.

Between science and philosophy there is then this radical difference: a science is preoccupied with a definite content peculiarly its own unconcerned with the content pertaining to any other science, the knowledge afforded thus being knowledge of a specifiable class of phenomena; no philosophy can be said to deal with a content not equally open to inquiry by a different philosophy, and the knowledge conveyed is accordingly unconfined to a domain of specialization in which it enjoys exclusive autonomy.

It must not be supposed that in such simple terms the issue regarding the contrast of science and philosophy could be adequately stated. Yet one line of demarcation is here clearly indi-

cated: the different contents of the different sciences, some continuous and others discontinuous, are specific and therefore non-interchangeable; the very definition of a given science must have reference to a particular subject of inquiry which constitutes its specialty. Could we speak of philosophies as divided by contents admitting no interchange, one philosophy limited to a specialty preclusive of duplication by another?

Whatever be the field a philosophy specializes in, whether in epistemology or metaphysics or ethics or any other, the field is not such as may be preëmpted by one philosophy alone; different philosophies, though differing radically in method or result, specialize in the same area; the content of one theory may be found reproduced completely elsewhere. Theories of knowledge, for example, though invoking for their support comparable data, are notoriously at loggerheads, a state of affairs not generally considered abnormal. If these theories were "scientific," as, let us say, astronomical and geological theories are scientific, persistence of conflicts in interpretation of a common subject matter would cause bewilderment if not dismay. What might appear as anomalous in science is no philosophic anomaly. And the reason is simple. The sciences owe their status as independent and non-competing disciplines to a principle which I shall henceforth call the principle of topical differentiation. No such principle is seemingly applicable to the various philosophies: the difference between them is irreducible to a difference of subject matter and must therefore rest on other grounds.

The point of these remarks is to bring into focus the cognitive issue in relation to philosophy. Suppose we state the issue in the biased manner of those for whom the cognitive endeavor pertains exclusively to science. To raise the issue in this form is to precipitate a dilemma rendering philosophy virtually moribund. It may be expressed and not altogether facetiously as follows:

Either (a) philosophy has no cognitive function at all simply because it is a function preëmpted by the sciences, each science possessing a special content, and all the sciences together ex-

hausting all the material available for knowledge; or else (b), if philosophy is to exercise a cognitive function legitimately, it must qualify for membership in the family of the sciences, and this it cannot achieve without appropriating a special area of investigation, segregated and limited like that of any other science, in which case there could be no more than one philosophy, just as there can be no more than one astronomy or one geology etc., the singleness of each discipline being definable primarily with reference to a particular and homogeneous subject matter.

Of the two horns of this factitious dilemma the first would appear to be less anomalous than the second. Indeed, the denial that philosophy has a cognitive function in the *same* sense in which such function belongs to the sciences involves no paradox at all provided we do not construe the pursuit of knowledge as one the scientific disciplines alone are engaged in by means of a characteristic method and relative to separate regions of fact. But to say this is to remove the dilemma which has no force save on the supposition that none but the accredited sciences are capable of discharging the cognitive function. Mere admission that philosophy is not strictly a science as regards the matter and manner of inquiry justifies no derogatory inference with respect to its cognitive claims.

That in not being a science philosophy is debarred from having a cognitive office is of course sheer dogma, and it is this dogma upon which the first horn of the dilemma depends for its quasi-intelligibility. It is indeed a strange dogma. Nevertheless, though unconscionable, the dogma does not run into the egregious absurdity involved in the demand made through the second alternative. This is the demand that philosophy cease being philosophy by becoming transformed into a science concerned with a particular class of phenomena, for thus only could it achieve autonomy comparable to that of any other science in relation to its special content. How preposterous is this proposed metamorphosis of philosophy! Such metamorphosis is evidently impossible unless a factual field could be found for it not yet occupied by any of the

sciences and explorable in ways cognate with those comprised under the name of scientific method.

The folly of this is patent: the second alternative requires of philosophy actual suicide. There is by hypothesis (on the basis of which the first alternative is made to rest) no domain of specialization akin to that of any science to which philosophy *can* secure access, the sciences having divided among them all factual content requisite for cognition. And even though a fresh and hitherto undiscovered subject were to call for the creation of a new discipline designed, in accordance with the principle of topical differentiation, to bring it under special inquiry, to speak of that discipline as philosophy would be plainly a misnomer on the assumption that it is governed by the procedures and canons of the scientific method.

In view of the dilemma mentioned, the function of philosophy, whatever else it may be characterized as being, can certainly not be described as cognitive.

The dilemma, however, is purely supposititious, and can of course not be taken seriously. There is no such dilemma if we refuse to confine the cognitive function to the sciences and to exclude its exercise in dogmatic fashion from philosophic inquiry. The dilemma disappears as soon as we recognize the first of its alternatives to be specious and the second meaningless: the spuriousness of the one and the absurdity of the other become manifest once we call in question the identification of all knowledge with scientific knowledge, and scientific knowledge with knowledge of heterogeneous groups of homogeneous phenomena.

The word knowledge is undeniably multiplex in meaning. Without qualification the word is well-nigh useless, there being of course no knowledge as such but only knowledge of certain kinds. The various qualifications to which the word is amenable—perceptual or conceptual, practical or theoretical, special or general, empirical or rational, scientific or philosophic—definitely show that we have here to do with a generic term which cannot be made to coincide with any of its specific uses. So long as the

content or context to which knowledge is relative remains distinct, no adjectival description of it can be exchanged for another.

Consider, for example, the distinction between perceptual and conceptual knowledge. The distinction is legitimate, but only if there is an irreducible difference between sense and thought. For if sensing and thinking were identical acts occurring in connection with their respective data, no line whatever could be drawn between, let us say, seeing a triangle and demonstrating its Euclidean properties. Visual awareness and geometrical proof are manifestly different ways of knowing the object; to be sure, which way of knowing is more basic or more significant is a crucial question with far-reaching implications. But between these two ways of knowing there is an indefeasible distinction which no philosophic theory can ever invalidate. We may arbitrarily limit the use of the term knowledge by applying it exclusively either to immediate perception or to discursive conception; such limitation, however, aside from being arbitrary, could not as if by semantic fiat abolish the contents actually present to whichever of the two modes of apprehension be denied the name of knowledge. If knowledge of the triangle is identified with but one way of apprehending it, whether by way of sense or by way of thought, how justify the designation of its rival as non-cognitive, seeing that the triangle really does serve as content for either kind of apprehension? Clearly, the matter cannot be disposed of by magisterial definition: in its neutral or undogmatic sense, the word cognitive fittingly describes any sort of apprehension of any sort of object, no special apprehension having a preëmptive right to the name of knowledge. Whether one kind of apprehension is more trustworthy or truer than another is indeed a problem of great difficulty and complexity.

Consideration of the problem of knowledge on its merits is not pertinent at present. Of major concern here is simply the contention that the philosophic activity *is* a cognitive activity and precisely *because* of its distinction from scientific activity, on the naïve but not trite assumption that knowledge is a generic concept of which no specific version has a monopoly.

Since the import of the predicate cognitive is so relative and variable, to withhold it from philosophy merely because, in choice of themes and procedures, philosophy differs from science, seems downright perverse. In this very difference lies the claim to knowledge which philosophy is entitled to make. The difference being basically a difference of subject matter, competition between philosophy and science is precluded on the same ground that renders impossible competition among the sciences. It is but in relation to the same object or objective that rivalry usually ensues, whether between persons or between disciplines.

The principle of topical differentiation by which the cognitive areas of the sciences are kept special and separate is the principle also to which philosophy owes its cognitive autonomy. Such topics as philosophy pursues do not fall within the purview of the sciences; being extra-scientific, they emerge in their own right as independent subjects of inquiry, neither duplicating nor displacing those of other disciplines.

But what precisely constitutes philosophic subject matter, distinct from as well as independent of scientific subject matter?

At the close of the last chapter allusion was made to a region of inquiry designated as reflexive. This region, markedly extra-scientific, is singularly the philosopher's own. There is, as I ventured to remark, no discipline so self-conscious as the philosophic. Reference to self-consciousness, a mode of apprehension typically reflexive, may here suggest a helpful analogy. But the analogy must not be pressed too hard.

Just as self-consciousness exemplifies an area of inspection in which subject and object are the same if and when the inspection is deliberate as in self-analysis or self-criticism or self-communion, so the philosophic activity, too, with respect to but one of its concerns, is essentially self-exploratory, preoccupied as it constantly is with its own nature and function, presuppositions and criteria, procedures and expressions, problems and aims. This persistent self-examination generates themes not simply propaedeutic; for of course every cognitive discipline requires consideration of

matters conceived as but preparatory. What distinguishes philosophic activity as reflexive is this: matters elsewhere viewed as introductory or heuristic become here independent subjects of investigation, inchoate questions of method, for example, culminating in methodology and initial problems of definition in semasiology (or semantics). To speak of philosophy as a discipline chiefly intent upon method of method or meaning of meaning or theory of theory or knowledge of knowledge is to convey in terse fashion the reflexive or self-conscious aspect of the philosophic enterprise.

Reflexive subject matter (to vary the vocabulary) may not inaptly be spoken of as immanent.

For in specifying the cognitive situation, which inevitably involves the relation of subject and object, philosophy need not go beyond the boundaries of its own domain: thematic material drawn from its inward nature often serves as object of inquiry, so that what philosophy thus seeks to know appears to be principally itself, comparable to self-consciousness in which (when it takes the form of introspection) the object inspected and the subject inspecting, though discursively different, are in some vital sense also identical. If the notion of self-consciousness, depending as it does on the strange union of difference and identity, is said to imply a paradox, the paradox obviously remains incorrigible, seeing that every case of introspection, unless the possibility of its occurrence be denied altogether, is a signal illustration of it. Paradoxical or not, self-consciousness clearly represents a type of cognition whose object does not come from without as contrasted with types assumed to have an "objective reference," in the external sense of the expression. Now the immanence characteristic of the contents of introspection, introspection being self-consciousness with an explicitly cognitive intent, pertains also to any contents arising from a source similarly autogenous, as it were, and many themes with which philosophy is preoccupied proceed from spontaneous generation. Issues precipitated by philosophy are often of its own making; they have their being solely within

certain speculative contexts, their meaning and relevance fluctuating from context to context.

May I hazard a rather striking illustration? The medieval issues (and of course not exclusively medieval) involved in the theories of universals (familiar, respectively, under the names of nominalism, conceptualism, and realism) are singularly immanent in the sense here intimated; creatures of philosophic discourse, they wax or wane in import largely within its contexts. The possible bearing of such issues upon other disciplines, notably the sciences, is not a matter of which these disciplines need to take overt cognizance, the cognitive function they exercise being neither fostered nor impeded by the philosophic problem of universals. Of the issues and theories relating to universals it can be truly said that they constitute a philosophic subject matter *par excellence.* And although the subject matter is clearly immanent, it can certainly be given a transcendent reference, but so given by philosophy when operating in a non-reflexive medium. Of the topics primarily immanent, those produced within its reflexive universe of discourse, philosophy perennially seeks to afford detailed cognition, in the sense of inducing full awareness and understanding of a self-generated subject matter.

By specifying one kind of subject matter as reflexive or introspective or immanent (terms more or less synonymous in the present context) we are able to identify with some precision a philosophic subject matter manifestly distinct from a scientific. There exists no science whose subject matter is derived from itself. The objects to which a science is related have an origin beyond or outside it: they emanate from a transcendent source, in the literal sense of the adjective, open therefore not to introspection, as it were, but to "extrospection," to use the antonym made familiar by S. Alexander. The language descriptive of certain thematic material germane to philosophy would sound bizarre in connection with the sciences. No science by turning upon itself can succeed in making itself an object of inquiry and remain the science it is; the notion, let us say, of an astronomy of astronomy or of a physiology of physiology, is palpably absurd, intolerable even as a jocular *façon*

de parler. It is just nonsense. And why so? Simply because the subject matter a science is concerned with consists of a segregated group of homogeneous phenomena, and such a group alone, envisaged as having an external source and independent nature, can constitute its particular domain of specialization. The incongruity of a cognitive discipline turning itself into an object of cognition ceases to be incongruous when the discipline engaged in this feat is a philosophic one. Philosophic theories, ever convertible into contents of philosophic theories, are legitimate objects of cognition. To be "self-conscious," as stated before, is a normal philosophic propensity; the sciences, on the other hand, burrowing assiduously in their non-reflexive fields, are required to be chiefly conscious of the extrospected data of their specialty.

The contrast indicated may be sharpened by a comprehensive comment on the sort of knowledge epistemology is said to vouch for, a singular discipline when its contents are compared with those of the sciences. The latter afford knowledge of the denotable phenomena comprised within separate areas, astronomy, for instance, being conversant mainly with the heavenly bodies and geology with the history of the earth. What scientific knowledge is intent upon is not knowledge in general: the principle of topical differentiation, spoken of earlier, insures the distinctness and autonomy of diverse domains of specialization. But what of epistemology? What precisely is it in pursuit of? Concerned though it is with the nature of cognition, epistemology is a discipline few would venture to describe as strictly scientific; its contents differ markedly from those with reference to which the sciences are defined and divided. The cognitive province of epistemology can scarcely be said to comprehend such things and events as fall, for example, within the spheres of chemistry and biology. If epistemology, albeit excluded from the family of the sciences, is nevertheless assumed to exercise a cognitive function, its preëmptive object of inquiry—and an object it perforce must have—can be no other than a reflexive one. It is knowledge about knowledge epistemology is in search of, its subject matter thus being distinct from that of any other cognitive discipline.

But if knowledge itself may serve as subject matter of knowledge, what kind of subject matter is it? What are its topical peculiarities and limits? A crucial question, this. We can here give but a bare intimation of its complexity as well as perplexity.

The view of knowledge as knowable would be wholly untenable without reference to possible modes of exploring or treating it as a distinct subject matter. What are the ways of turning knowledge into an object of knowledge? I shall note but three such ways, namely, the introspective, the analytic, and the critical.

Introspection need not be confined to its traditional use by psychology; it is a suitable name for the method of direct observation whose objects are basically covert. The level of immediate experience, for example, is generally conceded to be a private level open to examination only *in propria persona,* and the deliverances of such examination can of course not be identified or confirmed save by the *ipse dixit* of a solitary examiner. This is an old story. I mention it only to show that an epistemology delving into the immediate by the process of introspection is on difficult and slippery ground.

Consider the process of knowing as the content of an introspection which is itself a process of knowing. Can introspection introspect itself? If so, is the introspection introspected open to another introspection, and this to yet another, and so on *ad infinitum?* But if the introspective act is excluded from self-inspection, how justify the assumed convertibility of the cognitive process into a knowable object? The issue is more than verbal. Paradoxical is not just the reflexive form of speech—with some skill this may be avoided. What is anomalous is the situation denoted by it. We should not hesitate to reject outright, and not on linguistic grounds alone, the notion of seeing one's seeing or hearing one's hearing; no more plausible would seem to be the hypothesis of having awareness of one's awareness or of directing attention to one's attention, etc. Accordingly, no process of knowing can become its own introspective or immediate datum without turning, so to speak, a noëtic somersault; for what introspection presupposes is

the possibility of a fugitive act arresting itself, as it were, for the purpose of self-contemplation during the span of a specious present. The absurdity of this is patent. A different vocabulary may perhaps attenuate but cannot abolish such a glaring paradox. For the paradox is inherent in the attempt, and not merely in the reflexive diction needed for its articulation, to effectuate through a momentary act of introspection differentiation as well as identification between subject and object of the introspective operation.

But I do not wish to engage in polemics against introspection, whatever form it may assume, alone or in connection with psychology or phenomenology or existentialist ontology, my only purpose being to illustrate one way in which cognition is convertible into its own object. Whether taken as a separate theory or in conjunction with doctrines to which it is ancillary, introspective epistemology is certainly cognitive in intent, aiming as it does to explore by a singular method a definite area of explorable material. Difficult or even impossible the task be to capture by direct seizure the cognitive process as it occurs in a specious present, such is precisely the task devolving upon a theory of knowledge grounded in immediate awareness. For only as content of immediate awareness, it would seem, could immediate awareness be known as such. The possibility of introspection serving as datum of introspection becomes here the crux of the matter.

Analytic epistemology can operate from a broad base, since its object is not confined to immediate or momentary awareness. For what analysis presupposes is the analyzable and the analyzable is the composite. The content of analytic epistemology is thus of necessity complex; immediate awareness, too, if amenable to discrimination, must be possessed of some degree of complexity. Should such awareness turn out to be simple, not as introspected, but as sifted out from an admittedly more complex mode of apprehension—perception, for example, or memory or judgment—its simplicity could mean nothing else than resistance to further analysis. If analysis and not introspection is the approach to knowledge, complexity and simplicity would appear to represent

not so much intuited properties as operational products, denoting, in other words, a difference which is functional rather than structural. We name a thing complex if susceptible of distinction and partition; when such acts are inapplicable, the thing must be called simple. Nothing, therefore, can qualify as indiscerptible or composite until the process of analysis instituted in relation to it does or does not reach a certain limit.

Although the indiscerptible thus becomes equated with the ultimate limit of analysis, what analysis starts from or begins with must of course be deemed composite, since resolution of a whole into parts is what the analytic procedure principally aims at. The knowledge constituting the subject matter of epistemology, yielding as it does to the process of analysis, has thus an indefeasible complexity of varying degrees, since the examinable field covers the whole range and gamut of experience whose generalized exemplar is *homo sapiens.* As an actual occurrence knowledge is of many kinds, being at one extreme purely receptive and at the other deliberately constructive, and to distinguish between these extremes, as well as all the gradations between them, defines the task pertaining to this species of epistemology. And each kind of knowledge, as distinguished from all the others, becomes in turn a separate theme of analytic treatment; the principle of topical differentiation to which analytic epistemology owes its characteristic subject matter operates to segregate various modes of apprehension each amenable to the same disintegrative process.

Perceptual knowledge, for example, as a recurrent major theme of epistemology, may help to illustrate the principle of topical differentiation as it functions within this discipline. The ongoing complex of cognition, whether at the level of common sense or at the level of science, is never purely perceptual, and to turn perception into a separate topic of analysis requires its artificial disjunction from memory and expectation and inference and belief and other non-perceptual concomitants. It is by an act of deliberate differentiation from ways of knowing actually commingled with it that perception can be rendered topically distinct and independent; once such differentiation is achieved, the perceptual way of know-

ing may then internally be broken up or broken down into component parts. For the exhibition of these parts the distinction must be made between *perceiving* an object and the object *perceived,* and when the latter is sharply discriminated from the former, the object may then be resolved into separate qualities and relations, each sundered from each; and though qualities and relations are experienced in their "compresence" (to use S. Alexander's expression) and co-present with the act of experiencing them, the analyst can and does reduce this state of affairs to its simplest ingredients, "simplest" here meaning the same as the "no-further-analyzable." The problem of perception, as it is generally called, arises *as* problem only within the context of analytic epistemology, being indeed its most ingenious creation; the everyday percipient seems blissfully unaware of the subtle difficulties injected into his normal experience by a discipline especially designed for raising them.

Such cavalier allusion to the problem of perception is indeed unjustifiable except as an illustration of the sort of subject matter pertinent to analytic epistemology. And it goes without saying that the same procedure applied to problems contrived in connection with non-perceptual modes of apprehension culminates in results equally disintegrative. Whatever is exposed to analysis—memory or belief, inference or judgment, imagination or thought—becomes resolved into ultimate ingredients. And by following its method with uncompromising fidelity this epistemology has for its aim to advance our knowledge about knowledge in many significant ways.

It is necessary to insert here two brief observations on analytic epistemology, by way of transition to another theory of knowledge.

(a) Although undeniably an important method, analysis requires something prior, something pre-analytic, to which its operation may be directed. For the object of analysis *must* be complex if the simple, in the operational sense, is the same as the non-analyzable and hence as the uncompounded. No analysis, therefore, without a pre-analytic composite: this statement, valid as axiom or truism, can be gainsaid only by leaving analysis completely unemployable. The priority of a discriminable datum in

relation to the process of discrimination holds generally, and this priority is of singular relevance to the work of analytic epistemology.

The pre-analytic data of this discipline can be nothing else than our common specifiable perceptions or thoughts or beliefs, all admittedly complex; anybody's cognition, in fact, whether perceptual or non-perceptual, may serve as appropriate pabulum for the analytic activity. And the activity is in principle the same when the pre-analytic data chosen are derived from scientific rather than ordinary knowledge: presupposed in either case is always a situation susceptible of successive reduction to primitive or basic elements.

In either case, however, the analysis is *ex post facto,* having no power to affect the actual status of the analyzed subject matter: ordinary cognition arises and persists in gross and mixed fashion, regardless of the subtle and refined distinctions instilled into or distilled out of it; and the sciences, too, achieve their cognitive results unaware or heedness of the diagnostic labor bestowed upon them by epistemology. The sad truth is that in its effect upon actual cognition epistemology remains plainly otiose. To underline this I venture to entertain a fanciful but not too impertinent a hypothesis. Let us imagine the extinction of knowledge as a going concern. Could epistemology survive the catastrophe? It too would of course cease to be, bereft as it would become of a pre-analytic subject matter. Were epistemology to vanish, ordinary as well as scientific knowledge would continue to flourish without abatement or indeed with no change whatever.

(b) Not only is epistemology without influence on the state and condition of knowledge as it occurs, epistemology is also without capacity for interpreting such knowledge by a procedure strictly and exclusively analytic. By this procedure the complex of pre-analytic knowledge becomes disintegrated, the whole disappearing in its parts. Analysis alone is simply insufficient for an adequate theory of knowledge; imperative is always a counter-method for restoring the original conjunction of parts as present in all concrete cognition. And analytic epistemology, forced to compromise, must

resort to alien methods, that is, methods non-analytic, for reuniting parts so painstakingly disjoined. Association, integration, synthesis (or whatever be the name given to contravening operations) must as it were undo the work successfully achieved by successive anatomization. The nexus of pre-analytic cognition evidently calls for interpretation by procedures rivaling the analytic, and such procedures, and this is the irony, the analyst himself cannot help adopting to save knowledge from the anomalous result of his own effort: the reduction of knowledge to loose shreds is indeed reduction to the absurd. An epistemology merely analytic and hence reductive remains inevitably at variance with occurring knowledge, whether ordinary or scientific, occurring as it always does with varying degrees of irreducible fullness and concretion.

How then may knowledge about knowledge be construed as constituting the topical province of epistemology, seeing that its subject matter precludes adequate exploration by pure introspection or pure analysis? It is of course the assumed "purity" of either method that gives rise to the anomalies mentioned; as ancillary procedures the importance of both can scarcely be disputed. To a comprehensive theory of knowledge belongs the task of assigning to the two procedures their appropriate functions and limits. A theory concerned with the whole field of knowledge as content of inquiry cannot depend for its interpretation on methods tending to constrict or reduce the field. The method chosen must be commensurate with the intricacy as well as the integrity of the subject matter, and for such a method, following Kant's felicitous nomenclature, the proper designation is "critical."

Critical epistemology (principally though not exclusively Kantian) rests indeed on a surplusage of distinctions, but these are made for the purpose of showing how diverse are the conditions to which knowledge owes its possibility. For it is knowledge as actual, in the richest sense of the word, the occurrence of it vouchsafed by common sense and science, by mathematics and philosophy, which serves as pre-analytic theme of this epistemology, a theme unavoidably in need of profuse analysis. Such analysis, how-

ever, is not reductive: actual knowledge retains its original actuality, be the process of its anatomization ever so fine and finespun. The subject matter is knowledge as given, and given on different levels and in different forms, critical inquiry having for its chief aim disclosure of the grounds that make *possible* the kind of *existent* knowledge said to be sustained by *necessary* principles of validity.

The procedure on which critical epistemology depends is, so to speak, contrapuntal: analysis and synthesis are mutually implicated, each subservient to each, neither operative without its rival. But though the critical method might thus be viewed as if headed in opposite directions, priority definitely belongs to synthesis; unless evincible as impervious to discrimination cognitive experience must be initially regarded as a fusion of different constituents. And what of analysis? It has no other function than to reveal the intricate nature of cognition, the revelation being powerless to tamper with its pre-analytic status. Cognition as object of cognition thus remains unchanged by the act of discerning its heterogeneous constituents as well as by the act of interpreting the same in terms of disparate conditions. As astronomy, for example, cannot alter the nature of the heavenly bodies by the devices relied upon for investigating them, so in analogous fashion, the analytic discovery of the complexity latent in cognition leaves the cognition analyzed inherently unmodified. What in either case does undergo change is not the subject matter studied but our supervening understanding of it. For critical inquiry, therefore, cognition as *de facto* given is necessarily a composite datum, and as such, though deeply conceived and systematically interpreted, the inquiry must leave it.

If any single dictum could be said to voice the spirit of critical epistemology it would be this: *what is distinguishable is not separable.* Indeed, we could hardly hit upon a more telling way of suggesting the priority of the whole over its parts.

Consider again perception as pre-analytic datum, complex with a vengeance, otherwise it could hardly have lent itself for so long as favorite target of philosophic analysis. How interpret the status

of the distinctions made variously and repeatedly to explicate it? Are they valid antecedently or but derivatively?

The distinction sanctioned by tradition is between subject and object, correlative terms averred to be constitutive of the cognitive situation as such. The perceptual situation would signify nothing if no line at all could be drawn between a percipient and a percept standing to one another in some specific relation. This way of stating the case is too general to be more than a truism. Further distinctions are obviously needed with reference to the percipient, on the one hand, and to the percept, on the other. The subject of perception, to be distinguished from the subject of non-perceptual cognition as well as from the subject as related to the object in non-cognitive ways, must be ultimately made to coincide with the subject of pure sensuous apprehension, the percipient becoming the recipient of things impinging upon the senses. Analysis can do wonders in paring away from the percipient all except sensory awareness. And analysis can do the same with the percept. This, too, ceasing to be what it appears to actual experience, a thing full-bodied and richly qualitied, becomes ultimately discriminated into simple impressions or sense data or sensa or sensations or whatever the object's constituents are called, such constituents being present, it is alleged by some, to an experience reduced to mere sentience. And so, as a consequence of this sort of analysis, the perceptual situation emerges as a major philosophic problem. How envisage the real nexus and the objective validity of these and many other analytic products?

Now critical epistemology does not conceive of analytic products (or post-analytic data, as they had better be called, i.e., given after and through analysis) as enjoying a validity prior to the function they exercise as vehicles of interpretation. Analytic distinctions, such as are wrought by criticism, are implicated in a pre-analytic complex, capable of being educed thence to formulate and not to solve a problem. All distinctions to which perception is amenable have heuristic rather than probative force; they serve as discursive aids in disclosing the depth of perceptual complexity and in raising the issue regarding the nature of perceptual structure.

With the help of the distinction between content and form, for example, implicit and conjoined in any object, the problem of perception may be brought to light in many of its ramifications. When content and form are viewed in isolation—so viewed but reflectively or by abstractive attention—the difference between them is striking: the perceptual content, as revealed by discrimination, possesses features altogether unlike those characteristic of the form, being contingent and variable and unpredictable: we may guess but can never foretell with any assurance *what* will or will not impinge upon our sense organs. It is otherwise with the form of perception, spatio-temporal or categorial, concerning which, prior to perceiving anything whatever, predictive statements are possible. To the perceptual form pertains a discernible stability and necessity absent from the perceptual content: we can always declare beforehand, and declare with confidence, *how* the percept must appear if it appear at all. But content and form, it is important to remember, are post-analytic products given with the pre-analytic percept, and having apart from it no independent status, in the sense of being separable items separately perceptible.

Upon the contrast of content and form hinge the deeper distinctions needed for elucidating the perceptual problem. The content, analytically reducible as it is to a sensuous manifold, is precluded from reaching the level of a unitary percept without formal or rather formative concepts, and it is with reference to such concepts alone that what is apprehended may be spoken of as "intelligible." The pre-analytic fusion of sensible content and intelligible form, open to critical discernment but not to actual modification, defines the place of the *a priori* in human experience. Because content and form are distinguishable but inseparable aspects of experience, no chaotic content or contentless form ever being experienced, the *a priori* is but a product of analysis required for interpreting the necessity and invariance of the order of experience as contrasted with the contingency and fluidity of its materials.

Of this concrete blend of contrary and irreducible aspects any case of perception is a typical illustration. To a perception as a whole, being a complex the content of which consists of a non-

predeterminable sensuous manifold, the label *a priori* is manifestly inapplicable: it would be absurd to affirm universality or necessity of anything which in part is sensibly conditioned. But it would be equally absurd to deny the *a priori* relative to that part of the perceptual complex which, not being derivable from the sensuous manifold itself, *can* be determined, and determined logically, in advance of its presence. Solely as regards the forms, spatio-temporal or other, is determination *a priori* possible, for without them diffuse and unrelated contents could never be apprehended as integrated particular percepts.

What is all-important is the allocation of these distinguishable aspects to different sources. No knowledge at all—here the chief contention—without prior synthesis of sensible content and intelligible form, and it is the second alone which has an origin traceable to the mind. What is *a priori,* therefore, in distinction from what is not, ultimately depends on the role the mind is held to play in the cognitive situation. If the mind is assumed to be just a sensorium, as it were, a patient acted upon by outer stimuli, a recipient of impressions rather than a percipient of objects, under such an assumption no meaning could of course be attached to the *a priori:* to speak of impressions as logically prescribed in advance of their occurrence is to talk nonsense. But if the mind is not merely patient but agent as well, if knowledge proceeds from active construction and not solely from passive reception, and if the constructive operations requisite for knowledge are basically identifiable with judgments, then a deduction of the categories, valid *a priori* for all possible experience, can be legitimately (or *de jure)* undertaken, for such categories, implicit in all mind-made (or *de facto)* judgments, appear to be necessary and universal ways of thinking whatever we think about. Mind's agency functioning through certain forms essentially judicial thus becomes the source of the order of knowledge; and if we abstract from knowledge the order due to mind's formative categories, reducing mind to the position of mere patient, we are left with nothing but a welter of sheer impressions, such stuff as not even dreams are made of.

We may thus understand the deduction, to express it in simple

summary fashion, by conceiving of knowledge in the absence of mind as agent, that is, in the absence of mind acting through *a priori* determinable forms upon the contents of its experience; so to conceive of knowledge, which is a conception contrary to fact, is to demonstrate the validity of the deduction, certainly in part or at least negatively.

Were we to assume mind to be purely passive or receptive, the acquisition of scientific knowledge must needs appear as mystery or miracle. The assumption is of course utterly fantastic. Requisite for scientific knowledge is mind not simply as patient but primarily as agent—the agent observing and experimenting under contrived conditions, the agent making inferences and inductions, the agent framing hypotheses and formulating theories; these and other activities of mind, in their conscious and deliberate exercise, involve conceptual or categorial forms, and it is the *a priori* validity of such forms that render possible *de facto* use of operative rules or principles of explanation in accordance with which any and every science confers intelligibility upon its given subject matter. That scientific knowledge is made, and made by the agency of human reason, will not be readily denied. The question at issue would seem to be not this but something else, namely, whether the fundamental concepts or categories presupposed for scientific knowledge are exclusively or exhaustively those of which critical epistemology furnishes the deduction.

Needless to say that only a full exposition of this epistemology could do justice to the notion of the *a priori* relative to mind's agency as implicated in the cognitive situation. The few salient points selected for free treatment must here suffice merely to intimate the general spirit of a deeply conceived attempt concerned with the attainment of knowledge about knowledge.

All this would seem a long way round to the thesis that in possessing a reflexive subject matter philosophy is radically unlike science. Science is exploration of things and not of science; philosophy, though a study of things by its own methods and for its own ends, is a study also of itself. But in becoming self-knowledge,

as in epistemology, philosophy is not turning into a dispensary of supererogatory information; epistemology, no rival or substitute for the sciences, represents a super-added discipline in search of adequate hypotheses or theories about the presuppositions or foundations of the cognitive undertaking. The knowledge pursued by this discipline, whatever the procedure followed, shares the uniqueness of self-consciousness in being reflexive. Study of analysis by analysis, inquiry into the nature of inquiry, reason's critique of reason, and similar ventures, indicate fields of cognition differentiated from fields harboring scientific subject matter.

Epistemology is a crucial example of a discipline the topical specialty of which is reflexive and thus extra-scientific. But philosophic activity, whether or not epistemology form its basis, a matter of intra-philosophic dispute, can of course not be identified entirely with theory of knowledge. There are areas open to philosophic investigation as non-reflexive as those the sciences specialize in. And when philosophy is asserted to be cognitive, in the "objective" sense of the term, the knowledge meant is obviously of the nature of things and not of the nature of philosophy. Consonant with the principle of topical differentiation, what could qualify as subject matter peculiarly philosophic yet non-reflexive as scientific?

Chapter V

NON-REFLEXIVE SUBJECT MATTER

Philosophy and Science are disciplines equally cognitive but in relation to different areas of inquiry. The areas occupied by the sciences have for their contents the denotable objects present or presented to external observation; each science "specializes" in a selected group of such objects, the selection being determined by the principle of topical differentiation. This principle, while tending to divide the sciences into heterogeneous domains of specialization, serves also to preserve within every domain homogeneity of subject matter. In general, the principle applies to philosophy and science with like force; indeed, it is this principle which enables us to draw between them a clear line of demarcation. Modes of cognition differ of course in various ways but their basic difference concerns subject matter, the ultimate issue being what knowledge is about rather than how knowledge is attained. It is trite to say that in the absence of anything knowable knowledge becomes a word without meaning. Bereft of a subject matter, and one peculiarly its own differing intrinsically from any other, an inquiry ceases to be cognitive in any sense of the term. This is true of philosophic as well as of scientific inquiry. There must be specifiable topics pertaining to philosophy, be its investigative procedures ever so unlike those adopted by the sciences, if the ascription to philosophy of a cognitive function is to be justified.

Now one way of indicating the contrast between philosophy and science is to bring into play the distinction between reflexive and non-reflexive fields of investigation. As shown earlier, a science does not investigate itself; to engage in self-examination is not an integral part of its essential vocation; to trace its genesis or to

probe its logic or to canvass its relation to other sciences does not fall within its particular province; and when a science, leaving its proper sphere, does indulge in theories regarding its origin or method or affinities, such theories cannot be arrived at by procedures germane to its special subject matter. For example, a geologist might indeed be interested in the history of geology (and not merely in the history of the earth), in the logic of scientific induction (and not just in the method of dealing with the record of the rocks), in the place of geology in the family of the sciences (and not exclusively in the characteristic problems of his own discipline), but these interests are extraneous or only tangential to those distinctive of his specific cognitive area. Moreover, these interests, not being geological, cannot be satisfied by methods adapted to the study of geological phenomena: the history of the science of geology, for instance, is a topic clearly differentiated from that of historical geology (one of the branches of the science), demanding for expert study a dissimilar mode of procedure. The point need not be labored: no science can include within the limits of its homogeneous subject matter hypotheses or theories about itself and remain the discipline it is; and when a science does turn itself inside out, as it were, and by such inversion becomes a topic incorporated within its domain of specialization, the topic remains alien and unassimilable. For the only domain of relevance for any scientific inquiry is a non-reflexive domain; the objects it comprises are always other than and different from the processes or operations by which the inquiry is instituted and guided. The numerous activities epitomized under the name of scientific method, the various powers of the mind set in motion for the achievement of scientific results, are all, so to speak, outward-bound, pertinent to states of affairs taking place in an extra-subjective world: the study of rocks or stars or organisms, or other phenomena equally external, is a study of things as things, and it is to what occurs outside the sciences that the sciences severally address themselves.

One subject matter of philosophy (as illustrated chiefly though not exclusively by that branch of philosophy called epistemology)

falling, as it does, within a reflexive area, is thus radically distinct from the subject matter of any of the sciences. When knowing itself becomes the subject matter of knowing (whatever be the mode of knowing selected for exploration) the efforts exerted in this reflexive pursuit are notably inward-bound, not only in the obvious case of introspection but also in connection with the more subtle methods of analysis and criticism. For the knowledge conveyed by any theory of knowledge is clearly not knowledge of those matters or matters of fact preëmpted by the sciences, unless we suppose epistemology to be in competition with astronomy, biology, or any other—and indeed every other—scientific undertaking. Of the things the sciences are concerned with, epistemology can hardly be said to furnish knowledge of superior competence. If epistemology is to be regarded as a cognitive discipline it must have a subject matter not broached by any other discipline, and this we found to be essentially reflexive, epitomized under the expression "knowledge of knowledge." The expression, as already indicated, is obscure or elliptical, in need of elaborate interpretation. Here, however, it is sufficient to note but this: although the cognitive situation as a whole, and in its generic aspect, is the characteristic theme of epistemology, the approach to the cognitive situation by epistemology must be principally from the side of the knowing *subject,* the known or knowable *objects* comprising the facts as amenable to expert interpretation by the scientific method. Since the claim to scientific expertise cannot be the claim of epistemology, epistemology must obviously surrender all jurisdiction over the objects of knowledge; if it is nevertheless to afford knowledge of knowledge, the knowledge serving as object can be nothing else than the phenomenon of knowing in which a subject is invariably implicated as patient or agent, and of this subject turned into object epistemology may indeed claim, and claim legitimately, to be the sole investigative discipline.

The contention advanced may be stated even more strongly: knowing is a mental event, and the subject involved in it a mind. What epistemology exemplifies, therefore, is mind's concentration upon itself.

Preoccupation with knowing as a differentiated topic of inquiry, preoccupation ultimately of mind with itself, generates the distinctive and familiar issues of epistemology, such, for example, whether mind is quiescent in the cognitive situation or operative in it, and, if the latter, how or by what means mind's agency is exerted. Mind's agency when reflected upon by mind is open to sundry interpretations, depending upon the procedures by which the reflection is guided, i.e., whether the procedures are principally introspective or analytic or critical. And the factors due to mind said to be controlling, what are they—assumptions or postulates, concepts or forms, categories or principles? One of the major questions precipitated by the study of knowingness *ab intra* is the question concerning the *a priori* nature of some of these controlling factors. Here then is a large area of inquiry, one unmistakably reflexive, cognate undeniably with the area denoted by self-consciousness.

In dwelling upon the reflexiveness of only one type of subject matter, we might be tempted to think of philosophy and science as poles apart. A word of caution, therefore, must be inserted.

In the first place, philosophy is not confined to reflexive subject matter; we shall presently consider non-reflexive spheres of inquiry which are different but continuous with those the sciences specialize in.

Furthermore, no science, be its direction ever so outward, is precluded from serving as an "object" approachable from within. When a votary of a science is reflectively concerned with its presuppositions or operations, its basic concepts or grounds of validity, its formal criteria or material truth, when he deliberately meditates on these and analogous matters, he is a philosopher *malgré lui.* And it would be a strange scientist indeed who did not on occasion and at least superficially look from the inside into the foundations or canons of his particular discipline. So just as philosophy may explore non-reflexive fields akin to those of the sciences, so any science, by reflective ingression, as it were, may become converted into a reflexive domain. This is mentioned but in passing

to attenuate somewhat the contrast so far drawn between the philosophic undertaking and the scientific.

And now having established the contrast of philosophy and science by distinguishing reflexive from non-reflexive domains of inquiry, we must turn to a consideration of philosophic subject matter which, though differentiable from scientific, is closely related to it.

As we have noted, the sciences are divided in accordance with the principle of topical differentiation, each sovereign, as it were, in its own particular domain. The sharp division of the sciences, as well as their increasing isolation, is inevitable so long as scientific knowledge is dispersed among many and different specialties. Can we think of scientific knowledge apart from specialization in specific subject matter?

The terms "specific" and "special," as applied to any scientific discipline, are virtually interchangeable and each is as ambiguous as the other. Is geology, for example, a special branch of knowledge because the things it specializes in constitute a specific class of phenomena, or is geology a species of science because its investigation has to do with certain special features or processes of the earth's conformation and history? Both terms are here equally apposite, and it matters little which we choose to characterize which, the science or its objects, though it may perhaps comport with better usage to epitomize under "special" the nature of the cognitive activity and under "specific" that to which the activity is directed.

But this is not merely a problem of proper locution. There is nowadays in certain quarters a tendency to dispose of philosophic issues by reducing them in cavalier fashion to a linguistic level. Yet, however we clarify or refine their meanings, and whatever decision we reach concerning their valid employment, the problems certain terms suggest are profound, and would remain so regardless of semantic considerations. Semantic modes of approach are indeed important, and I do not wish to belittle them, but in the present context they are quite irrelevant. As a rose by any

other name would smell as sweet, so the issues here broached would in any idiom betray their significance.

For what is here at stake is a grave matter, resulting from the inevitable dispersion of scientific knowledge among heterogeneous specialties. In view of such dispersion, knowledge described as scientific denotes strictly the knowledge pursued by the several sciences severally. What the sciences achieve not separately but jointly no particular science is able to show, for the knowledge it exemplifies is always special and about a subject specifically its own. The relation to one another of the different specialties is the special concern of none. Hence the difficulty inherent in the notion of scientific knowledge. Should it be understood in a merely distributive sense or might it also be given a collective meaning? The principle of topical differentiation by which the sciences must be guided would seem to require that we interpret distributively the knowledge they are intent upon: scientific knowledge can be no other than such knowledge as the separate sciences attain but separately.

The principle of differentiation, unless balanced by a counter-principle, is thus operative in segregating the sciences into cognitive compartments so isolated that what happens in one need have no bearing upon what happens in the others. Yet it is generally assumed that the sciences are species of a common cognitive genus, and when their generic meaning is discerned, whether by historical or comparative or other methods, the knowledge yielded by them would seem susceptible of a collective interpretation, so that scientific knowledge might rightly be construed as knowledge all the sciences achieve together.

But what precisely may the sciences be said to represent when envisaged in their integrity? How describe their generic features? Whence the justification of different specialists—let us say, for example, physicists and biologists—to regard themselves as partners in a "joint concern," each often speaking quite authoritatively not only in the name of his specialty but in the name of all science? There must indeed be some close affinity between the different kinds of scientific inquiry for a specialist in one compartment of

research to act as spokesman for the whole of science. What is this affinity? And if all the sciences belong to the same cognitive family, how is this singular group related to the philosophic disciplines?

Such questions chosen at random do not, to reiterate, fall within the purview of any particular science. No science, whatever its subject matter, is preoccupied with its own origin or evolution, or with the nature of its relation to the other sciences. The genetic as well as the generic aspects of a science pertain to the contents of different spheres of learning, such as the history and the philosophy of science. It is the former which is engaged in tracing the genesis or genealogy of the various scientific disciplines, and upon the latter devolves the task of discovering those resemblances or ties in virtue of which they form a single class.[1]

The search for the generic in the specific, not only in science but in other spheres of human interest—religion or art, for example —is singularly characteristic of philosophic inquiry, and this suggests a definite locus of its non-reflexive subject matter, for the data chosen for generic discernment are specific disciplines or practices antecedently operative in differentiated ways. If the sciences are under the dominance of the principle of topical differentiation, as indeed they must be to be determinate, the counter-principle germane to philosophy, to which the sciences must submit to be comparable, I venture to call the principle of discursive synopsis. But between these two principles the distinction is not absolute, yet upon its relative validity must ultimately rest the argument for a philosophic subject matter both non-reflexive and cognitive.

Apart from its literal sense, synopsis is a word of varying meanings and uses: there are many ways of seeing together different sorts of things. The principle denoted by the term is elastic and catholic in application; familiar under other names, synthesis and

[1] No indelible line marks the boundary between the history and a philosophy of science; each may and does draw from the other material for construction or interpretation.

integration being its nearest equivalents, it is the principle and not the name that ultimately matters. If I prefer the word synopsis it is because of its obvious continuity between its literal and extended meaning. To look at sundry things together is certainly characteristic of human experience generally, and to relate distinct phenomena, under some comprehensive conception or hypothesis, is a propensity in which all the sciences share; the synoptic function of philosophy is akin to that of the sciences, philosophic synopsis differing from scientific primarily in reach or scope. Any other name will of course do if it be a name for the principle here adumbrated—the principle of "seeing together" in some definite and systematic fashion narrower or wider ranges of objects. By qualifying the principle as "discursive" I wish to limit its use to the highly articulated forms of synopsis such as find embodiment in the explicitly cognitive disciplines of science and philosophy.

Differentiation and synopsis are correlative and interdependent processes. Scientific knowledge, even though conceived as basically distributive, requires for its possibility their constant interaction; indeed, any particular science, be the domain of its specialization ever so narrow, must have for exploration an area wide enough to include a variety of specific data amenable to some hypothesis or theory regarding their generic affinities. There can of course be no science without a differentiated subject matter, one comprising a diversity of particular and denotable phenomena; nor is any science conceivable as capable of dispensing with some synoptic conception of a pervasive nexus or order covering the totality of phenomena falling within the scope of the inquiry. Discriminative and integrative operations (to vary the vocabulary) are complementary; no cognitive discipline can eschew one in favor of the other without abandoning its data to imperviousness or looseness.

In speaking earlier of epistemology as exemplary of a reflexive subject matter we commented on the disintegrative effect of the analytic method if not redressed by its corrective. Without something pre-analytic given as complex, analysis remains inoperative; and analysis, being a method for breaking up or breaking down

its given or chosen object, must, if left to itself, necessarily arrive at the indiscerptible or the no-further-analyzable. Having reached its goal, what then? Analysis is, so to speak, a one-way operation; with the attainment of its objective, the labor of anatomization ceases. Analysis can of course not undo the reduction achieved, and the consequence is this: either the original complex vanishes as such, nothing remaining save the isolated ingredients, or else the process of analysis must be reversed by the antipodal activity of synthesis, for this activity alone can restore to the disintegrated complex its actual pre-analytic concretion.

This parenthetical reminder of a previous consideration is merely intended to reinforce the view that the cognitive task involves the interplay of two complementary principles. Discriminative and integrative operations can be distinguished but not separated, and it matters little by what verbal equivalents they are designated. Appropriate in some contexts are analysis and synthesis, in others, differentiation and synopsis. But whatever pair of terms be chosen, and many such are eligible, the processes denoted by them are equally ineradicable, and ineradicable alike from science and philosophy.

To the principle of topical differentiation, as we have seen, the sciences owe their segregation, every science thus becoming autonomous and unimpeded in its own domain, but *within* every science the discriminative and integrative activities are related contrapuntally, as it were, for its subject matter is open to division as well as to unification, the former by observation of the relevant phenomena which are as such particular and the latter by subsumption of the same under some general hypothesis or law. But no scientific synopsis, which is but immanent within the area of the special phenomena investigated, can extend beyond its proper and limited sphere. Is it possible to achieve a synopsis of things transcending the sundry and sundered interpretations of them by the various sciences? Such a synopsis (assuming its possibility) could devolve only upon the supervening discipline of philosophy; and in pursuing a synoptic aim beyond that of science, philosophy

may therefore be characterized as a cognitive undertaking literally meta-scientific.

It would, however, be manifestly absurd to suppose that philosophy in transcending the sciences could displace or replace the cognitive results achieved by them severally; to go *beyond* science should in this context be understood as an act of but going *further* in synoptic interpretation. Meta-scientific synopses typify cognitive fruitions the sciences can neither give nor take away. For it is philosophy which is preoccupied with the unity of science and *a fortiori* with the unity of nature (assuming nature to be parcelled out, as it were, for separate exploration by the separate sciences). From this point of view, philosophic cognition *is* cognition, its differentiation from scientific being primarily a question of spread of synopsis. But this theme will concern us later. Meanwhile, the difference of scientific and philosophic synopses, a difference of degree rather than kind, can be indicated more precisely by dwelling again on the interplay of specialization and generalization so necessary for all constructive cognition.

Specialization and generalization are undeniably correlative and inseparable. For within any domain of specialization the increase of knowledge depends on those general concepts relevant to the segment of nature defining or confining a particular science. Any area of knowledge, discrete in relation to any other, exemplifies immanent continuity. This is but another way of saying that a scientific hypothesis, supposing its validity warranted, embraces a wide range of observable facts the totality of which must be viewed as falling under its jurisdiction. Extensive generalization within a given field of intensive specialization belongs to the very essence of scientific activity.

What, however, is the connection between the separate generalizations achieved by the different sciences? It is in response to this crucial question that a philosophic view of the sciences becomes requisite to discern and bring into focus their generic features, so that discrete scientific inquiries might be seen not only as distinct but as related, and related by concepts or categories expressive of their union in the complex whole of knowledge. In the com-

prehensive structure of a philosophy, the special sciences lose nothing but their discreteness: in traversing the boundaries that divide the sciences, a philosophy does not—indeed, cannot—contradict or supersede them; supervening upon their cognitive tasks without intervening in them, a philosophy represents a distinct cognitive pursuit guided by the principle of discursive synopsis in its broadest sense.

Accordingly, if men of science must be acknowledged as expert generalizers in relation to those fields of inquiry in which they are specialists, philosophers may be looked upon as skilled specialists in the art of extending generalizations beyond the limits deemed legitimate in any single department of scientific cognition.

And yet, be it ever so inclusive, a philosophy remains but a particular theoretical construction, distinguishable from any other in various ways—in mode of procedure, linguistic expression, basic concepts, coherent development, probative force. And as no special science can lay claim to being the whole of science, so no single speculative venture may pretend to encompass all of philosophy. How then account for so many synoptic philosophies bent upon catholicity?

The need for separate fields of scientific specialization, restricted as they are to specific areas of nature, can be readily explained; the boundaries of these fields are more or less clearly marked by the heterogeneity of their subject matter. But a philosophy concerned with a synoptic conception of the sciences comes in conflict with rivals engaged in the same synoptic pursuit but from different standpoints or by different methods. The curious if not anomalous result is this, that domains of generalization grow into domains of specialization, each with its special problems and special issues, its special postulates and special tenets, its special technique and special diction.

All this should occasion no surprise. In a previous chapter[2] stress was laid on the philosophic enterprise being both rational and free. The choice of a philosophic position is indeed optional;

[2] Chapter III, "Primacy and Priority."

once chosen, however, and if discursively formulated, the position is under the dominance of reason's principle of contradiction, its own intrinsic character dictating the peculiar method and language requisite for articulation. The principle of contradiction, being primary, is binding upon every species of philosophic discourse, while the priorities of one philosophy need not be those of another. The principle imposes the universal injunction that all philosophic activity be carried on in conformity with it without determining the choice among philosophic positions evincible as equally compatible with the requirement for self-consistency. The function of the principle is thus constraining as well as permissive; prohibiting philosophic discourse the licence of irrationality in the form of self-inconsistency, the principle does not preclude the possibility of any number and variety of self-consistent constructions. There is nothing anomalous therefore in the idiosyncrasy of any and every inclusive generalization: a philosophic synopsis, however universal in scope, can never be anything but a particular synopsis. This seems inevitable in view of our distinction between primacy and priority and in the light of the fallacies mentioned attending their confusion.

We shall in another context revert to the theme adumbrated in an earlier chapter. We allude to it here merely to accentuate the complete relativity of specialization and generalization. And precisely in this relativity lies the basis for contending that between the cognitive pursuits of science and philosophy there can be no absolute breach.

No science, to reiterate, no matter how minute the area of its investigation, can dispense with general concepts valid within that area; and no philosophy, though its universe of discourse be conceived as coextensive with the universe of existence, can avoid exhibiting the true nature of things except in a special medium.

The relativity spoken of will be considered unexceptionable with respect to science. The generalizations achieved by a scientific discipline are doubly limited, (a) in the sense of but applying to the preëmptive facts of a separate field of specialization, and (b)

in the sense of but enjoying the validity warranted by present verification. The universals of any science, though it may sound logically offensive to say so, are particular universals. And each bears upon its face, so to speak, the mark of a proviso. For any scientific generalization purports to cover *all* the instances of a specifiable class of facts, but a class the totality of which is never complete, including as it does data not yet encountered, and with respect to the discovery of new facts assumed to belong to the same class, there is always the possibility that such discovery may fail to confirm present generalization, resulting in the necessity of its revision or even abandonment. If the special and conditional nature of scientific universals does not strike us as anomalous it is because we view such universals as hypotheses ever at the mercy of congeries of observable phenomena. It is otherwise with the universals conceived by philosophy: these are usually thought of as having unlimited extensiveness. The provisional and modifiable status of scientific universals is as a rule not the status commonly held to be characteristic of philosophic universals.

Here of course is not the place to deal on its merits with a subject so variously interpreted. There is hardly a philosophy not plagued in one form or another by the problem of universals. But on any theory, and in any idiom, between scientific generality and philosophic universality the distinction must be somehow drawn. For whatever a philosophy advances as universal—for example, the basic concepts of its epistemology or cosmology or ontology—has a spread or sweep to which no scientific generalization can lay claim, seeing that the genesis and verification of the latter always depend on observable data germane to a restricted area of inquiry. What in a given science acquires generality is, if we may speak in metaphors, but endemic, in contrast with the pandemic universality propounded in philosophy. And the claim to such universality no philosophy can abandon without surrendering its essential distinction from science, just as science in its turn would cease to be science if the scope of its generalizations ceased to be regional or circumscribed.

An old tendency to challenge the cognitive value of philosophy has again become fashionable. Meta-scientific universality, it has been alleged, differs radically from scientific generality, there being no evidence such as the sciences rely upon to justify its validity. Indeed, philosophy so greatly transcends science, and not merely in scope, that the attribution to it of a cognitive function is but an exercise of speculation. On the assumption that scientific knowledge is paradigmatic, such knowledge alone being objective and verifiable, philosophic thought can be spoken of as cognitive only by a sort of verbal licence. It is a good maxim, however, not to strain to excess the meaning of words. Knowledge in the pregnant sense just cannot be imputed to philosophy without exposing to jeopardy the prerogative status of science. In the final reckoning, philosophic knowledge is not knowledge at all. This is a drastic denial, and involved in it is the thesis that nature has for ever been divided among the special sciences; the synopsis of each being inevitably particular and exclusive, a conspectus of things by concepts cosmic in scale becomes *a priori* precluded, incontrovertibly so if all cognitive claims that can be legitimately supported must have for their frame of reference strictly delimited fields of specific subject matter. Scientific claims, in a word, are plural claims the validity of which can be no other than distributive.

What of the unity of science? This conception, whatever it mean as theory or aspiration, and be its importance or utility ever so great, cannot serve as super-addition to scientific knowledge. The sum of all the special disciplines drawn by supervenient speculation does not represent a new cognitive acquisition. Could accession of actual knowledge result from a conceived unity of science? If so, then by the same token, religious or artistic accretion should attend every attempt to colligate the diversities of religion or art. It would be odd indeed, to say the least, to argue thus.

All this sounds plausible only if we accede to the dogma that the sciences have a monopoly of knowledge, all knowable subject matter being distributed among them, so that other claims to knowledge becomes pseudo-claims and must go by the board for

want of legitimate objects of investigation. The dogma is singularly perverse. Many are the grounds for rejecting it, some having been discussed in the preceding chapter.[3]

Semantic animadversions to the contrary notwithstanding, knowledge is a term that enjoys and will continue to enjoy an elastic sense. It is of course preposterous to demand that philosophy relinquish its productive office, that it exchange its own cognitive function for analysis and clarification of the cognitive craftmanship embodied in the special sciences, thereby assuming a relation to scientific constructions comparable to the relation of aesthetic criticism to artistic creations. It is preposterous because philosophic cognition cannot be abolished or reduced by doctrinaire fiat. We have indicated how cognition itself may serve as knowable object open to different ways of exploration; "knowledge about knowledge," far from being but a reflexive mode of speech, aptly characterizes what all epistemology is ever in pursuit of. To seek to know how knowledge operates, under what specifiable conditions and by means of what forms or categories or principles, is to institute a significant inquiry into a significant subject matter.

But the kind of subject matter under consideration at present is cognate with that of the sciences in being non-reflexive. An outgoing direction is not peculiar to the sciences; philosophy, too, is concerned with the nature of an external world; unlike the sciences, however, philosophy attempts to elaborate the universals essential for exhibiting the world's unity and continuity, leaving to other disciplines the specification of the universals pertinent to their several fields of inquiry. The dogma that cognitive value pertains solely to special universals, general universals being meaningless or supererogatory, owes plausibility to a sectarian theory of knowledge, such—and this is the irony—that runs counter to the very spirit of science held by certain of its spokesmen in almost idolatrous veneration. No science can of course lend support to any dogmatism. And it is a strange and negative dogmatism

[3] Chapter IV, "Reflexive Subject Matter."

that *a priori* condemns as spurious cognitive claims not subject to scientific jurisdiction.

With the aid of the distinction between special and general universals—or (if the logically fastidious prefer) between scientific generality and philosophic universality—an oblique light could be cast on a perennial question—namely, why do philosophies differ from the sciences in being so incorrigibly competitive?

The sciences, as we have noted, construct exclusive bodies of knowledge, but the exclusiveness is primarily one of subject matter. There is, for example, no rivalry between astronomer and zoölogist: each recognizes the other's claim to autonomy in his individual area of specialization. And exclusiveness of subject matter does not prohibit—indeed, demands—inclusiveness of hypotheses or theories relating to the special objects investigated. Division of labor, which explains why the sciences are non-competitive, is singularly and conspicuously absent from philosophy: its inquiry precludes partitioning in accordance with nature's partitionable regions of phenomena: while the authority of the sciences can only extend to their respective "spheres of influence," the authority philosophy is bent upon exerting is ubiquitous. Even when philosophy is divided into certain of its traditional branches—namely, logic, ethics, epistemology, metaphysics—unlimited comprehensiveness is the implicit desideratum in each and every branch. Whatever be its topical delimitation, with respect to the content chosen a philosophy represents an exclusive structure of thought aiming at universal inclusiveness. Such universal inclusiveness—and there's the rub—is the compass of mutually exclusive thoughts in relation to similar and interchangeable contents.

In view of the distinction here adumbrated, it is not impertinent to assert categorically that competition can arise neither among the special (scientific) universals nor between any special (scientific) and any general (philosophic) universal.

We may phrase the issue, to be discussed later in another form, in this fashion: Owing to the delimitation of its special field of investigation, it is impossible for one science to compete with

another. Nor can the alleged antithesis of philosophy and science inhere in the work of a particular scientific discipline. A given science, precisely because of the exclusiveness of its subject matter, cannot serve as standard for a conspectus of things transcending the domain of its specialization. The relation of science and philosophy would indeed be one of antagonism if each could invade or annex the other's territory. The principle of topical differentiation, which operates to divide the sciences, operates likewise to segregate the sciences from cognitive interests falling outside them. Only between schemes of thought having reference to similar or identical contents can cognitive conflicts break out. The opposition that seems ineradicable is thus only between equally inclusive claims embodied in the mutually exclusive philosophic products.

The conflict of general universals constitutes an intra-philosophic problem of great magnitude touching the core of speculative thought. How, it has often been asked, could such thought lay claim to being cognitive, in the cognate sense in which scientific thought is so, seeing that its specific manifestations are so strikingly incongruous—in the positions held, in the methods employed, in the languages adopted, in the concepts preferred, in the data selected, in the results attained?

With this theme we are not yet prepared to deal. Our present concern has to do chiefly with the general nature of philosophic activity. Only as related to its generic meaning can specific differences of, or rather within, philosophy be properly appraised. But this is a task that awaits our attention in another context. Here but a few concluding remarks are still necessary mainly to reinforce the salient points already made.

If philosophy is to exercise a cognitive function, it must have a characteristic subject matter distinct from the subject matter of any other cognitive undertaking. This is fundamental. Indeed, distinctness of subject matter is for philosophic discourse as primary a condition on the material side as conformity to the principle of contradiction is a primary condition on the formal side.

There is one kind of subject matter, so we have contended, for

which no analogue exists in science, on the assumption that no discipline, psychology not excepted, may lay claim to the title of science in the absence of an "out-going" method for apprehending its special data. The procedure requisite for reflexive areas of inquiry must clearly be "in-going." Inquiry into inquiry, for example, is legitimate inquiry. To achieve an exact topography of a reflexive area, whatever be the means employed, is the aim of all philosophy in its "self-conscious" preoccupation, so to speak, and especially when philosophy branches off into epistemology.

For epistemology is nothing if not a topographical inspection of a vast reflexive field in which the knowledge sought is not about the nature of external things but rather about the nature of the inward constitution and operation of the cognitive apparatus: all distinctive epistemic topics, if I may play upon the word, emerge from such a topographical survey. As regards reflexive subject matter philosophy undeniably represents a cognitive inquiry *sui generis*.

Concerning the other type of subject matter, the theme of the present chapter, philosophy and science are clearly of a cousinship, the difference between them being a question of degree. Designation of their subject matter as non-reflexive simply denotes a common cognitive direction. The topics of science are derived not from self-examination but from examination of discrete regions of nature where its specific data have their locus; and philosophy, too, in its non-reflexive pursuit, must look to nature for its appropriate topics. But the nature to which philosophy turns is seen *ab initio* as somehow single and continuous.

The traditional name for science as natural philosophy is a felicitous reminder that between philosophy and science the relation could be regarded as close as that of genus and species. And the compliment is of course returnable: to describe philosophy as speculative science, and the description is not indefensible, is to accentuate from the other side the same relation of genus and species. On the theory that a synoptic activity is paramount in all discursive knowledge, re-interpretation of the sciences as species of philosophy could not be disparaged as mere lapse into archaism.

For any science, to speak of this again, be the details of its subject as minute and disparate as the most searching analysis could bring to light, must ultimately arrive at some generalized conspectus of them. To comprehend particulars together under some pervasive notion or hypothesis, is this not the aim of every science? And when a scientific conception assumes the status of a law, it acquires the dignity of an authentic universal, covering as it must the totality of phenomena belonging to a specifiable class. Now this synoptic function of the sciences is akin to that of philosophy, philosophic synopsis differing from scientific, as already noted, in amplitude of sweep. Synopsis as such is essentially elastic; it may include within its purview wider or narrower ranges of fact, the limits of synoptic vision depending on interest or purpose, procedure or technique. How far may synopsis be carried? Philosophy has always sought to achieve a conspectus of things beyond that of any science, and only by the fiat of a perverse dogma can it be decreed that synopsis must forever remain confined to those special vistas, large though they be, afforded exclusively by the separate sciences.

But if meta-scientific synopsis is not excluded on *a priori* grounds, and if the wider the synopsis the more adequate our view of the world, then implicit in the synoptic activity of science is an inevitable trend or nisus toward philosophy, and its ancient and honorable name as natural philosophy becomes from this standpoint eminently apposite.

Yet when all is said about the notion of synopsis as basis for relating science and philosophy in the manner proposed, serious questions arise concerning the nature of the data from which scientific and philosophic cognitions take their departure. The topical or topographical area of any special science comprises specific data to which investigation is directed, the data, for example, being the stars if the special science is astronomy or the plants if botany. These data are determinate and denotable. And when science is said to culminate in synopsis, whether it take the form of conception or hypothesis or law, synopsis must have reference to the specifiable data constitutive of a limited subject

matter. What precisely are data of philosophic synopsis? How do philosophic data differ from scientific? And in what consists their bonds of connection?

Chapter VI

DIFFERENTIATION OF DATA

We have attempted to show in very general terms what sort of subject matter might properly be regarded as pertaining to philosophy. The fields of inquiry in which philosophy pursues its cognitive aims, neither duplicating nor superseding those of the sciences, may be called, in accordance with the terminology we have adopted, reflexive and non-reflexive, the first clearly extra-scientific and the second meta-scientific.

The study of knowledge as object of knowledge, to allude to the example chosen, is certainly extraneous to the objectives the sciences are intent upon: the sciences seek to establish cognitive relations with things and not with themselves. When philosophy selects for exploration the nature of cognition, its universe of discourse is altogther different from that of science, cognition of cognition not being what science is essentially engaged in. The reflexive area from which philosophy draws its content and concerning which it propounds theories falls outside the province of science.

But the topics germane to philosophic inquiry are derived also from non-reflexive territories, such as the sciences occupy, and with regard to these topics the cognitive results of philosophy may be said to be meta-scientific rather than extra-scientific. In synoptic function, philosophy does indeed go beyond science but only in amplitude of conspectus, in seeing, as it were, "more" things together than come within the purview of science, and from this point of view philosophy can be said to differ from science not in kind but in degree. And it is these differences of kind and of degree which the terms extra-scientific and meta-

scientific are designed to suggest, differences ultimately between reflexive regions of inquiry and non-reflexive.

In any case, whether philosophy differ from science in kind or degree, it has a subject matter peculiarly its own, consonant with the principle of topical differentiation.

The sense in which philosophy is extra-scientific need not be expatiated on at present. But the meta-scientific import of philosophic inquiry, the sense in which science is transcended by philosophy in extent of synopsis, requires at this point further clarification.

Metaphors are notoriously misleading and should be used with caution. I cannot refrain, however, from describing a science as "vertical" in structure and philosophy as "horizontal."

A science, as already noted, is special precisely because the subject matter germane to it is derived from a limited area of nature which constitutes the particular frame of reference for its hypotheses or theories. The image of a special science as vertical suggests a structure with a definite base or support, and it suggests also its essential discreteness. The more specialized a science, the narrower and hence surer its foundation, but hence also the greater its separation from any other specialized science. The sharp differentiation of the sciences, each pursuing its objective more and more in isolation, has tended to obscure if not obliterate their horizontal connections, and it is with these, marking the continuity of the various sciences, with which philosophy is preeminently concerned.

The terms vertical and horizontal should of course be abandoned if by means of them the distinction between discrete and continuous bodies of knowledge cannot pictorially be intimated. Whatever images we invoke—and no language unless it be non-verbal can avoid imagery—few will deny that human knowledge embodies in its structures two complementary interests or preoccupations; the duality in question finds expression in the correlative terms of special and general, specific and generic, analytic and synthetic, and the like.

The sciences, if envisaged as vertical structures, seem to operate, though not exclusively, in the dimension of depth, so to speak, each by its own method or technique delving into all the details of its subject, relatively unconcerned with the minutiae of the subject pertaining to a different scientific domain; and this intensive quest for what lies beneath and behind the surface of the observed phenomena selected from a particular area of nature leads to the construction of a distinct body of knowledge of which the articulation demands a set of special concepts and characteristic nomenclature.

Now the different philosophies, considered as horizontal in construction, move rather in the dimension of breadth: each by the use of its own procedure or device embarks upon the widest possible sweep of things beyond the discrete boundaries drawn by the various sciences, the aim being to discover in the specific manifestations of nature some generic traits or universal patterns. Viewed thus, a philosophy of science is a synopsis of the sciences, culminating in an extensive theory of the nature of things; and this vision of continuity serves as a sort of counterpoise to the factitious partitions between the many and separate fields of specialization.

But neither the division of the sciences nor the division of science and philosophy can be construed in terms of a radical antithesis. Between the sciences, however divided, there can be no opposition: each science is autonomous within its own domain and grows more solitary with the increase of concentration upon its own special subject matter. No vertical structure can be in conflict with another on the assumption that each has for its base a separate fund of facts.

Nor can the difference between science and philosophy, which is a dimensional one, constitute a contrast of opposites. Between science and philosophy there can be hostility only if each seeks to usurp the function of the other, a feat hardly possible provided the vertical and the horizontal dimensions remain distinct and not interchangeable.

Suppose we think of a science as usurping the function of

philosophy. Such a science would be driven, apart from the investigation of its own subject within a particular domain of intensive specialization, to make occasional excursions into the domain of extensive generalization, thus passing from a vertical to a horizontal plane of thought. Now it does happen, though not often, that a man of science—let us say, a physicist—may be a philosopher also, a master of specialization as well as of generalization, but in the exercise of these two distinct kinds of mastery, such a man must live a double life, as it were, for as physicist he is preoccupied with but a single cognitive area, which he obviously could not identify with the whole of science, yet as philosopher he must be interested not merely in the one individual discipline in which he is especially proficient but rather in the relation of this discipline to other cognitive species, for the sake of arriving at a conception of the integrity of human knowledge in the growth of which his specialty, however comprehensive his view of it, can claim no disproportionate share. In other words, the physicist moves in a vertical and the philosopher in a horizontal direction; and though physicist and philosopher be united in one person, the province of the former cannot be exchanged for that of the latter save by a decided shift in the dimension of inquiry.

But the two dimensions are correlative and inseparable. Every vertical structure has, if I may say so, a horizontal stretch of its own; or any area of knowledge, though discrete in relation to any other, exemplifies an immanent continuity.

It is the broader continuity, not within but between the sciences, which becomes a theme for special interpretation, and one transcending the cognitive limits of the scientific disciplines, since such theme forms no part of their explorable subject matter. Upon philosophy devolves the task, to speak in pedantic fashion, to expand intra-scientific into inter-scientific horizontality. Or (as noted before) so complementary are the terms special and general that they may be used to clarify the distinction between scientific and philosophic universals: the universals a science aims at are special universals in the literal sense of having no reach beyond the contents in which the science specializes; and if the

universals of a philosophy are asserted to be general universals because investable with the widest possible expanse, that philosophy within whose context such universals are formulated and justified remains nevertheless and inescapably a special philosophy. It is one thing to proffer generalizations relative to special subject matter, it is quite another to construct through the medium of a special philosophy (and every philosophy *is* special—in vision and aim and method and idiom and otherwise) generalizations about subject matter not strictly delimited.

In view of the dimensional duality of cognition so far sketched, we may now broach a central issue. Distinctions such as those between vertical and horizontal structures or between limited and extended synopses are more or less equivalent in marking the difference between the two kinds of subject matter, scientific and philosophic, comprised within the compass of non-reflexive inquiry. But, and this is crucial, whence the data of philosophic cognition? Have meta-scientific data the same denotable or definable status as scientific data?

For, we must reiterate, it is only with reference to specific or specifiable data that a subject matter can be defined or denoted. Without data, whether of observation or description or interpretation, no subject matter; and without subject matter, as exemplified by its characteristic data, no cognitive discipline. The principle of topical differentiation is one to which the sciences owe their division and autonomy; in default of it, every science would meddle with every other, and philosophy would investigate everything or nothing. There can be no distinct territories of inquiry unless data are available serving to indicate or to illustrate their preëmptive topics. The starting point of every inquiry is always something given, and to the given alone can a particular mode of procedure be directed, the mode varying with the kind of datum precipitating it.

Now with respect to the given points of departure for the various sciences the matter is seldom one of obscurity or controversy. Scientific data, as we shall note, are quite definite, and

this definiteness enables the principle of differentiation to operate in securing to the sciences their separate domains of specialization. The application of the principle to philosophy, sufficient though it be for dividing in gross fashion reflexive themes from non-reflexive, is beset with many difficulties as soon as we raise the issue regarding the "givenness" of the thematic material.

If epistemology be construed as having a subject matter typically reflexive, what precisely are its data? In what sense does what is *here* given, the material to which inquiry is directed, differ from what the sciences take as initially exemplary of *their* subject matter?

And if we suppose that as regards non-reflexive subject matter, which it shares with science, philosophy transcends science in synoptic knowledge by subsuming under horizontal conceptions the separate achievements embodied in vertical structures, how fundamental is the difference between the data required for scientific and those amenable to philosophic synopsis?

Data definitive of philosophic subject matter can obviously not coincide with those distinctive of scientific subject matter unless the principle of topical differentiation be abandoned altogether with consequent confusion or competition between the various cognitive disciplines. Philosophy must have characteristic data germane to its own topics on the assumption that it occupies a cognitive territory either extra-scientific or meta-scientific.

To deal with the issue adequately we need to clarify in preliminary fashion the meaning we are here to attach to a term so laden with ambiguity. Different philosophers have used the term datum in different ways and applied it to different things. The difference in use and application becomes evident when we replace the Latin word by its English equivalent. In speaking of the given, if we speak of it without qualification, we literally beg or invite a number of embarrassing questions. For nothing of course is just or merely given; we cannot help asking, given as what? given how? given where? given when? given to whom? given for what purpose? Such and related queries, when raised, receive varying answers in accordance with the varying procedures and expressions of philosophic thought.

I am not primarily interested in the linguistic problem. Because of the freedom in the choice of method and diction which philosophy permits, a contention advanced in an earlier chapter,[1] the concept of the given must needs have a sense strictly idiomatic consonant with the peculiarity of the position to the articulation of which it is basic. To demand that one philosopher employ a technical term in a way or for a purpose preferred by another is tantamount to the demand that he surrender his position. Different philosophic idioms, as we argued, are untranslatable if the positions they serve to formulate are irreducible or non-interchangeable. It is the plural philosophic positions, ends to which the means of articulation are especially adapted, which explain the necessity for the ambivalence or rather multivalence of philosophic terminology. So long as the philosophic enterprise is a free enterprise, varieties of philosophic persuasion requiring modes of utterance suitable to them remain ineluctable. In the light of this we should not be surprised to find that the given, a technical notion difficult if not impossible to eschew, may assume diverse and incompatible meanings and uses.

But the philosophic enterprise is not only free but also cognitive; if so, then the notion of the given must correspond, as it does in science, to something symptomatic of a determinate subject matter from which inquiry may proceed. Here presently to be shown lies the crux of the problem.

As it figures in science, the given may be understood as given *for* or given *through* inquiry (whatever the procedure adopted) or, to express the same thing in temporal terms, as given *before* or given *after* inquiry. The two aspects of the given, whether construed in a temporal or non-temporal sense, are plainly distinct. There is generally no confusion between the "antecedents" and the "consequents" of an investigation (expressions noted for their convenient ambiguity in lending themselves to logical or causal interpretation). Anything, in fact, said to generate or condition

[1] Chapter III, "Primacy and Priority."

scientific inquiry, reveals itself in the end, when inquiry has reached a relative or temporary consummation, to possess traits or forms or relations not originally fathomed. The significance of this statement, trite though it appear, will be brought out in the sequel.

Meanwhile we must proceed to sharpen, even if but verbally, the two aspects of the given just mentioned. I have long been in the habit of expressing their distinction as pre-analytic and post-analytic.[2] This but epitomizes differences in givenness relative to initial and terminal phases of inquiry, the prefixes having temporal as well as non-temporal connotations: the equivocation peculiar to the given is thus strikingly exhibited, for data *pre*-analytic antedate or determine inquiry and data *post*-analytic ensue from or depend on inquiry.

Against this manner of speaking, however, a caveat might perhaps be entered on the ground that "analytic" tends to suggest an erroneous notion of inquiry as if it could be adequately typified by the activity of analysis. To be sure, in some disciplines emphasis on that activity would not be misplaced if the analytic method could be shown to be the sole or principal method of obtaining the cognitive results sought. What seems exceptionable is the disposition to look upon analysis as a primary or paradigmatic procedure. The question obviously is not whether any discipline can dispense with analytic operations as ancillary to its cognitive task but only whether such necessary operations are sufficient for its purpose. At all events, if a generic meaning is assumed to be assignable to the data involved in any and every mode of inquiry, the choice of the qualifying term analytic would seem arbitrary. What is given for (or before) analysis or what is given through (or after) analysis is certainly given but given merely in relation to a single and specific mode of procedure.

This objection if somewhat punctilious is not pointless. And it gains additional force from the fact that in certain theories analysis has acquired a special if not sectarian status, serving, in particular,

[2] I first stated the distinction in the article "Pre-analytic and Post-analytic Data," *The Journal of Philosophy*, Vol. XXIV (1927), pp. 5 ff.

as remarked previously,[3] in behalf of a reductive type of epistemology. To speak of *scientific* data, for example, as pre-analytic or post-analytic, would hardly be illuminating unless the term analytic could be accorded a sense more neutral or less rigid than some philosophers are wont to grant it.

But the difficulty is of much greater scope: it could be raised equally with reference to any other cognitive act in relation to which data may be distinguished as antecedent or consequent thereto. Since cognition, whether scientific or philosophic, is so complex, what particular procedure could appropriately be singled out as representative of its total process? To speak of data pre-conceptual or post-conceptual and data pre-inferential or post-inferential is not illegitimate but only when conception or inference is the operation an inquiry chiefly depends on. But how typical of the cognitive undertaking as a whole is either kind of operation?

Yet no basic issue is at stake, unless we choose to make such an issue of it, in exemplifying a complex by any of its discernible parts. Needed for scientific and philosophic inquiry are of course many acts and phases, but any of them may be selected to illustrate what is given to be investigated and what is given by means of the investigative pursuit. Viewed thus, no scruple, certainly no linguistic one, should debar us from characterizing data as pre-analytic or post-analytic, provided only that we do not identify the entire complex of inquiry with the analytic procedure.

Apart from the possibility of disengaging any specific act as exemplary of cognitive action, in the sense of serving as a particular sample of it, analysis may be considered exemplary in the honorific sense of the term also. And it may be so regarded, not indeed as a special method appropriated for a special philosophy, but as a universal act of mind requisite for all inquiry. But to qualify as universal, analysis must be broadened in meaning; when thus broadened, it signifies the same as discrimination or discernment. Accordingly, if to be analytic is synonymous with being discerning or discriminating, what investigator, no matter what he

[3] Chapter IV, "Reflexive Subject Matter."

investigates, can dispense with analysis as a necessary implement of knowledge? And this, as we shall see, is more than a verbal issue. Incidentally, analysis is too good a word to leave in possession of those who, usurping it as a label for a philosophic cult, tend to draw a vanishing line between methodology and methodolatry.

There can of course be no injunction against replacing analysis by some other term comprehending the specific acts involved in cognition. But no term can rival analysis in generality if construed as synonymous with discernment or discrimination. I have often thought of interpretation as a possible alternative. Retaining the usefully equivocal prefixes, all data might will be classified as pre-interpretative or post-interpretative. Such classification, however, raises too many controversial issues. What, to mention one, is the relation of interpretation to the various operations and phases of inquiry?

That all inquiry entails some analysis, in its broad sense, can be shown without much dispute, for some act of discrimination is always a necessary concomitant at every stage thereof. Even observation presupposes analysis: indiscriminate observation is certainly useless for cognitive purposes. But without elaborate argument, it would not be quite so easy to contend that all acts of inquiry, including the act of observation, are inseparable from interpretation. At all events, such contention, though not untenable, is out of place in the present context. For the time being, therefore, and merely as a linguistic convenience, I shall continue to speak of all data as pre-analytic or post-analytic.

Regardless of matters pertaining to nomenclature, the situation before us is plain enough: whatever be viewed as the given in any discipline represents either its starting point or end product. And since the given as thus conceived is definitive or exemplary of a determinate subject matter, the particular data of one discipline can obviously not be the same as those of another. To phrase this differently, the specific nature of the given presupposes a special field of inquiry *in* which it may be given but the generic meaning

of the given *as* given can consist in nothing else than being given either *for* the institution of inquiry or *by* the process of inquiry. What we must here bear in mind is the distinction between individual differences of data and similarity in the sense of their givenness: the differences can be stated only with reference to territorial divisions of inquiry in which data appear as such, the similarity is but one of function, data being in every case what, on the one hand, inquiry starts from, or what, on the other, inquiry arrives at.

All this will be amplified. Before proceeding, however, it is important to recapitulate the distinctions thus far made. These are —(a) the logical distinction between the given as the antecedent and the given as the consequent of inquiry; (b) the temporal distinction between the given as anterior and the given as subsequent to inquiry; (c) the distinction between the generic meaning of the given, whether in sense (a) or (b), and the specific character of the given in the different fields of inquiry.

In the ensuing discussion we shall focus attention chiefly on what is initially given (data prerequisite for or antedating inquiry) rather than on what is given terminally (data following or emerging from inquiry). And we shall refrain from raising the issue, not strictly relevant here, which of the two meanings of pre-analytic data, the temporal or the non-temporal, is the more fundamental. Our emphasis will largely fall on the specific differences between the pre-analytic data of science and philosophy, assuming that their generic affinity consists in the function they serve to provide starting places of inquiry. Indeed, the same generic meaning that belongs to the specific data of the special sciences pertains to the separate data to which the disciplines of science and philosophy owe their topical differentiation.

The conception of scientific data, as distinguished from the data of a particular science, is patently generic. Because of the necessary delimitation of subject matter, in conformity with the principle of topical differentiation, the data on which a particular science depends are but seldom if ever those pertinent to another. Astronomy and geology, for example, representing as they do sepa-

rate fields of inquiry, proceed from phenomena not subject to interchange. And why not? The answer is simply because the topics which the data respectively exemplify are essentially heterogeneous. In the very non-interchangeableness of their data lies the ground for the claim to autonomy on the part of the two sciences with respect to the areas of their specialization. Astronomic and geologic data, in their pre-analytic sense, are mutually exclusive: What is given *to* each science *for* investigation is something specific preëmpted *by* it. To speak, therefore, of astronomic and geologic data as "scientific" is no longer to specify but to generalize. The affinity of the two sciences, however it might be established, is a topic falling within the purview of neither. If there are pre-analytic data for this topic, the data can be called neither specifically astronomic nor specifically geologic; the ultimate relation of these sciences, if considered given, and given as product of hypothesis or theory, can be given only on the post-analytic level.

What holds of the examples chosen may be applied more extensively. The sciences are all differentiated chiefly with reference to specificity or specialty of subject matter typified or represented by denotable objects. And such subject matter may be said to be given—*originally,* in particular and observed instances from which inquiry starts; *ultimately,* in the traits or structures or ways of operation the observed material is discovered to possess in consequence of inquiry. The relation between the pre-analytic and post-analytic data constitutive of its entire subject matter, the total topic, as it were, each science must exhibit in its autonomous field of investigation and by its own modes of procedure.

Let me briefly revive the vertical and horizontal images in order to elucidate a theme phrased in too general and abstract ways.

If we think of a science as a vertical structure, though with an horizontal spread internal to it, we see more clearly how pre-analytic and post-analytic data are distinct as well as related. Of the subject matter of a science we may fittingly speak as having a base and a summit. At the base are facts or things or objects or phenomena (expressions in this context of similar denotation but of different connotation) given to be inquired into, these being

the pre-analytic data of the science; at the summit are the same data made amenable to hypotheses, descriptive or explanatory, regarding their constituents or connections or mutations or interactions or regarding any of their other discoverable aspects, so that what is given initially for investigation becomes subsequently interpreted in terms of what cannot be given except through investigation. Yet, and this is important, post-analytic data are not numerically or divisibly other than pre-analytic; the terminal *are* the original data carried to the level of theoretical understanding and practical control. Nor can the total process of inquiry be logically bifurcated into relatively inchoate and relatively finished phases: the latter obviously mean nothing without reference to the former, just as data obtained by analysis would be without meaning if separated from the data preceding and prompting the analysis. And it is precisely such continuity which the image of a vertical structure is designed to suggest.

The continuity of base and summit (and the images may be used to symbolize the data as well as the phases of inquiry) is quite evident: any science must have specific data to start with, data to which the investigation is addressed, and these the science gives back, so to speak, but in subtly refined and minutely concatenated forms as the investigation advances to higher levels. There can be distinction but no separation between the basal and summital data of a science, comparable to the relation of lower and upper parts of a perpendicular body. (The term summital, as applied to post-analytic data, should of course be understood in a strictly relative sense, the end products of a science being such only *pro tempore* or having logical probability of varying degrees, and those exemplifying the highest degree might well merit to be spoken of more literally as summital.)

Continuous in the same sense are also the distinguishable acts of any investigation if, aided again by the vertical picture, we view them as proceeding from incipient to culminating stages: the scientific procedure discernible into successive modes, ranging from detailed observation to comprehensive theory, lends itself especially to metaphorical language: constitutive of cognitive inquiry are

sundry operations of which some may, not inaptly, be described or appraised as basal and others as summital.

Whether we focus attention on the subject of a science or on the science of a subject, the metaphor of a vertical construct or construction enables us to emphasize the continuity in the double givenness of the subject as well as the continuity in the progressive acts of the science.

But there is still another aspect of continuity for the understanding of which the metaphor is useful. Every science, since it represents a special domain of inquiry, is inevitably discrete but only so in relation to every other science. We often speak of a science as a "body" of knowledge, a metaphor not without a peculiar felicity of its own, because ordered knowledge as embodied in discursive form is a synthesis of specialization and generalization. What at the apex of inquiry a science achieves consists, as remarked earlier, of special universals, universals valid within the entire field of its specialty. Vertical with respect to every other body of knowledge, a science is inwardly horizontal, seeing that the continuity of its preëmpted content is the ultimate desideratum, a continuity receiving summital expression in the conceptions or hypotheses or theories assumed to comprehend under them the totality of the subject matter, or more precisely, the totality of the phenomena exemplary of it. But this point we need not develop further, having dealt with it before.

It remains now to be shown what we are to understand by scientific data in a distributive sense, their collective meaning not being, as intimated, a scientific concern. How do the pre-analytic data of one science differ from another if such data but signify or illustrate a particular subject or content pertaining to a vertical or discrete body of knowledge internally horizontal or continuous? What "given facts," in simpler words, constitute the private property, as it were, of one rather than of another discipline for the purpose of special investigation?

The question is more crucial than appears on the surface. For

involved in it are the debatable issues having to do with the relation of epistemology to scientific methodology.

In epistemological circles, especially modern, the notion of the given invariably plays an important and decisive role. Many things, depending upon the position taken or the method employed, have been identified with the given—sense data, sensa, sensations, impressions, essences, qualities, ideas. From the contexts in which these terms figure, it is not always clear how the given they designate should be taken. There is not seldom seeming confusion of genetic with generic considerations and both with analytic.

Let me allude to sense data by way of illustration. Are such data primitive elements in which all cognitive experience has its temporal origin, the actual genesis of experience being purely sensuous; or do sense data serve as concept under which to subsume the specific deliverances of the different senses, data such as visual and auditory being particular instances of the same class? And do sense data depend on analysis for their meaning and status as cognitive ingredients? For obviously without discrimination of a prior perceptual situation of some complexity we could never arrive at the notion of data alleged to constitute its inchoate or "atomic" elements. If the data of sense are bound up with the process of analysis, are they themselves discriminable or are they end products of discrimination? In my own idiom, are sense data pre-analytic or post-analytic?

The conception of sense data is complicated further by the usual assumption that what is given to sense is given immediately. And what is given immediately, it is held, can be given strictly neither for nor through analysis—not for analysis because of its presumed simplicity, not through analysis because of its supposed ineffability. Sense data, therefore, in being immediate data, and thus not open to discursive operations, preclude or defy analysis. And once immediacy is invoked, many difficulties ensue, chief of which is to determine whether immediacy belongs to the apprehension of sense data or to the sense data apprehended, and if to both, whether to both equally or differently. The anomalies here involved

are notorious, and yet, in spite of them, the appeal to *les données immédiates* is a favorite appeal and a recurrent one.

If the immediate and the discursive are mutually exclusive, and such appears to be the general contention, how account for the importance attached to the immediate by so many philosophers? For the difficulty with the immediate is not so much psychological as logical: whatever the immediate is *experienced* as being remains of course unassailed and unassailable, but if ineffable, nothing ultimately can be said of it or anything gainsaid. To speak of the immediate as given, whether given for or through inquiry, is to utter a paradox, unless the immediate is asserted to be logically communicable, neither alien to discourse nor alienable by it. If so, in what discursive form could the immediate be expressed?

I am here not concerned with the immediate as a polemical theme. I mention it merely to invite attention to the difficulties inherent in the given as a notion current in epistemology. We only need to disengage the conflicting interpretations sense data are susceptible of—namely, on the one hand, as original contents of apprehension, and on the other, as common traits of separate contents separately apprehended. And as for the analytic issue, we need but to ask, (a) whether sense data are pre-analytic amenable to finer discrimination; (b) whether they are post-analytic resulting from the discrimination of a composite experience antecedently given; (c) whether they are immediate data and thus on the nether side of utterance, ineffable themselves or objects of an awareness impervious to discourse.

It would be possible to show, were we to deal with the theme on its merits, that candidates for givenness other than sense data are in a like predicament. Are impressions or sensations, to take a different example, names for what is genetically elemental or for what is generically elementary in human experience? And if under impressions or sensations we include whatever is primitive or constitutive of all cognition, by what act of awareness do we identify a particular instance or member of the designated class? Implicit in these questions are the paradoxes of introspective and analytic epistemology. The appeal to intuition (or immediate experience by

any other name) consigns everything to the limbo of the ineffable where nothing can be specified, the process of specification being ulterior to intuition and forms no part of it. The very distinction between the act of intuit*ing* and the datum intuit*ed,* scarcely avoidable, is an analytic distinction completely alien to intuition, at the level of which nothing can be discriminated, nothing characterized, nothing articulated. And if, moving from the intuitive to the discursive level, the attempt is made to specify the rudiments or components of cognition, data asserted to be primitive or constitutive can be identified as such only by acts of abstraction presupposing antecedently given cognitive complexes, the abstracted data (whatever called) not being given except as end products of analysis. On the discursive plane, it is clear, between pre-analytic and post-analytic data the distinction becomes ineluctable.

After this apparent digression we now return to the main question concerning the specificity of scientific data. Allusion to such epistemological problems as center about the notion of the given was needed to establish the view that scientific data are such in their own right. For *specific* data, which a science requires to be the *particular* science it is, lose their specificity once we construe them in accordance with the meaning assigned to the given by epistemology. Or, putting the same thing in the reverse order, any science ceases to be a separate science when for its own data we substitute those belonging to another discipline and especially when we impose upon them interpretations borrowed from a theory of knowledge.

Speaking of sense data again, let us ask whether it is possible to interpret in their terms the pre-analytic data of any science. Are astronomic data, for example, sense data, and if so, how do they differ as such from those from which any other science takes its departure? Suppose that the constituents of astronomic phenomena be considered *à la rigueur* as reducible to sense data—yet it is not to the reductive constituents to which astronomic inquiry is directed but rather to their observed and observable congeries. This holds generally: the pre-analytic data of a science consists of denotable

and specifiable objects more or less gross in appearance, and although capable of reduction to elemental or elementary ingredients, what serves as the originally given is emphatically not any of the alleged components. The contrary assumption would be tantamount to a denial that each science has data and thus a subject matter peculiarly its own in terms of which alone a special and autonomous domain of inquiry becomes delimited and preempted. To be sure, sense data (whether visual or auditory or other) possess a specific nature in accordance with the special organs upon which they are said to impinge; and with reference to each of the different senses the data apprehended may vary endlessly in specificity; yet such specificity is altogether distinct from that of the pre-analytic data that divides one science from another. The objects that fall within the purview of different sciences, within, let us say, of astronomy and geology, might conceivably be reduced to similar or even identical sensa, but on the basis of sensa alone, it seems evident, no distinction whatever could be drawn between the two sciences, since each science would become susceptible of reduction to the other. This of course is reduction to the absurd.

The pre-analytic data of a science, the things with which its inquiry begins, things open to public inspection or observation, are literally *things*. What they may be analyzed into, not by the science in question and by its own modes of procedure, but by a supervening theory of knowledge following different methods, belongs to an extra-scientific universe of discourse. Assertions made by any epistemology about the things a science investigates seem to have no bearing upon their status as given for or through scientific study. To note again the absurdity involved in the assimilation of scientific to epistemological givenness: the things dealt with by the sciences must forfeit their specific and denotable character through their correlation or equation with the data of sense to which all observed things are equally reducible.

Differentiation of the sciences, which presuppose distinct data exemplifying their respective and non-interchangeable topics of inquiry, simply cannot be squared with a theory of knowledge for

which the constituents of every perceived object consist of sense data. Either such data are extraneous or irrelevant to the things the sciences are concerned with or they are intrinsic and constitutive of them. In the former case, the knowledge of which epistemology claims to be a theory has no connection with the knowledge the sciences are intent upon; in the latter case, the specific things to which the cognitive efforts of the sciences are directed have no genuine specificity if they can all be reduced to a common matrix.

The dilemma appears to remain in force whatever the reductive data of epistemology be called. It cannot be relieved by a change of names. The problem regarding the nature of the originally or immediately given, together with the problem of identifying it, is indeed important but solely in the context of epistemology; within that context the differences involved, often but terminological, are ultimately doctrinal; but such differences have nothing to do with scientific data. The pre-analytic data of a science are in no wise affected by the issues, whether verbal or real, raised in various theories of knowledge; it matters little what they are said to be the congeries of—whether of sensa or ideas, impressions or essences —*as* pre-analytic data they retain unaltered the status they have for and within the science. Regardless of what may befall them on the epistemological level, all scientific data preserve in their own contexts their proper meaning and function. And this is scarcely odd, for a supervening epistemology, being a discipline with its appropriate themes and procedures, cannot intervene in the autonomy of another discipline, an autonomy implicit in the very otherness of subject and method of inquiry.

What chiefly precludes assimilation of the data here differentiated is the fact that, unlike science, epistemology presupposes for the disclosure of the given either intuitive awareness or recondite analysis.

The notion of immediacy germane to theories of knowledge has no pertinency to scientific method. With the immediacy attributed to so-called primitive constituents no science can be concerned, its pre-analytic data being markedly different from the reductive

elements arrived at by procedures requisite for extra-scientific disciplines. Nor is the immediacy alleged to pertain to the apprehension of such constituents of scientific importance: science involves painstaking study and not just direct awareness of things. The exercise of observation is a function in inquiry, not to be confused with the absolute immediacy of intuition or even the relative immediacy of ordinary perception.

This last point calls for brief comment. It is possible to contend that observation is the same as perception, differing from it only in being deliberate and controlled, and should thus be regarded as possessing the immediacy characteristic of all perceptual experience. Let us not be too punctilious and cavil at a word: we may agree to describe observation as immediate provided only that it be understood as a specific act of inquiry exercised within perceptual range of the object and exercised as prerequisite to acts more circumspect and more elaborate such as inference and judgment. Observation as a function in inquiry presupposes for its operation proximity to the object, proximity being but loosely synonymous with immediacy. And observation is an act hardly ever isolated: it has aspects or concomitants exemplifying discursive operations of various kinds. But what immediacy may here be made to connote is nothing else or nothing more than sensible nearness of the object.

As thus intimated, however, immediacy is a far cry from the meaning given to it by many a theory of knowledge. Science has not anything to show resembling immediate data of awareness (or data of immediate awareness); even pure data of observation (or data of pure observation), assuming the possibility of their purity, would be immediate only by verbal courtesy: the relation of contiguity, as it were, between given facts and attentive acts affords the only licence for assigning immediacy to either term of the relation.

To be sure, the relation of contiguity, obviously metaphorical, may be regarded as a cognitive relation not restricted to the observational level. We have S. Alexander's authority for the view that

all cognition is an affair of "compresence" between a mind and the object it takes cognizance of. Without compresence, as he uses this felicitous expression, there can be no cognition at all. The little word "of" symbolizes the togetherness of every awareness with its appropriate content; for to be aware is to be always aware of something, and this something unless united with the pertinent awareness simply falls outside the cognitive situation. No less metaphorical than contiguity, compresence suggests a more intimate relation, so intimate indeed that it reveals itself to be completely equatable with immediacy. Although compresence of many kinds find in Alexander's doctrine full recognition, they all exemplify the same relation of intimacy. Every cognitive act is explicitly asserted by him to be immediate, thinking as much as sensing.

Grave difficulties are involved in Alexander's notion of compresence but with these we are not concerned.[4] One issue alone must be mentioned. Identification of compresence with immediacy is certainly baffling. Clearly, if there are kinds of compresence, there must also be kinds of immediacy; if so, is it not rather strange to consider sensation and thought, as does Alexander, to be "equally" immediate? And what happens to mediate cognition? Is mediacy without meaning? Should it be reduced to a species of its opposite? Does immediacy admit distinctions of degree? Such cognitive acts as scientific observation and scientific inference, though required to be compresent with their objects, can scarcely be said to be together with them in the same manner or with the same degree of intimacy. Togetherness with the objects seems nearer or closer in observation than in inference. If cognition be indeed an instance of the relation of compresence, observational cognition, which is possible only in propinquity of the objects, emerges as a special case of compresence, not interchangeable with any other as regards equality of claim to intimacy.

Further discussion of immediacy may now be omitted. Enough has been said to show that the epistemological meaning of the

[4] I have dealt critically with some aspects of Alexander's philosophy in "Is Metaphysics Descriptive or Normative?" *University of California Publications in Philosophy*, Vol. VII, pp. 141-180.

immediate cannot be made to coalesce with the scientific. The scientific method demands for its application data initially co-vicinal, as it were, with an observing organism, co-vicinity of observer and observed being the only tenable view of scientific immediacy.

The line between epistemology and science may be drawn even more sharply. Such immediate data as theories of knowledge contend for, it can be maintained, are not immediate at all in the sense in which data of observation are considered immediate. The immediately given, if not given observationally, can be given only analytically. With this seeming paradox we must deal very briefly.

Anything regarded as given to immediate awareness can of course not be given as "constituent" of a complex unless first disengaged from the complex of which it forms a part. Sense data, for example, if held to constitute a perceptual object, are known as thus constituting it not by intuition but by discrimination and judgment, acts not comporting with direct acquaintance. The perceptual content, presumably a given assortment of various sensa, differs from the content of each separate sensation which presumably consists of its appropriate given sensum. Which content is prior, the perceptual or the sensational, and is the priority temporal or logical? The question goes to the heart of the matter. Volumes have been written concerning it. Our interest is but confined to this: the distinction between the percept and the sensa alleged to compose it (not to speak of the cognate distinction between the perception and its constituent sensations) is an analytic distinction, and analytic also is the distinction between the diverse sensa. We are here altogether in the realm of laborious discourse.

The percept (or perception) is supposedly a complex of sensa (or sensations); the sensa (or sensations), being by hypothesis the constituents of a complex, might be thought of as given prior to the complex they constitute. But if so, given how? Is the givenness of primitive sensa vouched for by primitive awareness of them? Could such awareness reveal their contrasts, their similarities, their associations, their status as irreducible components of differing

percepts, etc.? Assuming sensa actually present to immediate awareness, the chief difficulty is to understand how, to such awareness, sensa could exhibit themselves as heterogeneous, as distinct from the composite percepts they form, and especially as elements enjoying priority over their perceived congeries. Discursive distinctions of the kind here requisite fall outside the compass of intuitive knowledge or knowledge by acquaintance. To analysis alone, as already noted, belongs the task of differentiating between the act of perceiving and the object perceived, and of reducing the contents of the latter to diverse sensa. If constituents are to be given at all, and given in relation to as well as in separation from the complexes they constitute, such constituents, since they exceed the grasp of intuition, can be given solely as analytic products.

At the analytic level priority must thus be accorded not to constituents but rather to whatever complex they are supposed to constitute; without an antecedently given complex, analysis has nothing to work upon. In a word, analysis presupposes the analyzable and the analyzable is the composite.[5] As regards the relation of perception and sense data, what is given in the first place, and given both in the order of time and the order of discourse, is perceptual experience.[6] Hence it is perception which is given as the analyzable and its alleged ingredients as the analyzed. In my own terminology, the perceptual complex is pre-analytic, the discriminated constituents are post-analytic.

This way of stating the matter affords not only an escape from the pitfalls of immediacy, it also serves to bring into sharp focus the incongruity mentioned of science and epistemology. The pre-analytic data of a science, such as are present at the initial stage of inquiry, can never be made to coincide with the post-analytic data of a theory of knowledge, termini arrived at by a discipline following methods pertinent to its chosen topics. This only reiterates the view advanced earlier, namely, that sense data (or

[5] See chapter IV, "Reflexive Subject Matter."

[6] Perceptual experience covers, it goes without saying, the act of perceiving as well as the object perceived.

other products of epistemological analysis) are of no interest or importance for scientific inquiry. No science actually begins its investigation with the end results of a theory of knowledge, its universe of discourse being delimited by its characteristic data and the subject matter the data exemplify.

If we think of such scientific data as are clearly pre-analytic, their conversion into the post-analytic data of epistemology involves a paradox too glaring to require emphasis. Every science has post-analytic data of its own but these, to reiterate, are continuous with the initial data to which the inquiry is directed: distinguishable data of the same subject are inseparable and interdependent. Scientific data, though definable as prior or posterior in relation to the various phases in a sustained process of investigation, all denote what the investigation is *about,* namely, the facts and events comprising a definite cognitive area, the selfsame facts and events being given equally to the different operations the investigation requires.

To be sure, the assumption of an identical subject matter differently given raises serious questions but questions principally extra-scientific or meta-scientific. For science itself the assumption is unexceptionable. The scientific method, of many and different operations all compact, would remain inapplicable if the diversity of data relative to the diversity of operations ceased to have reference to a common subject matter. Indeed, how could a science possess a subject matter at all if data of observation and of inference and of induction (to mention but these operations) were so separate and independent that facts observed would have no connection with what might inferentially be gleaned or inductively generalized from them?

Accordingly, if no correspondence can be established between the pre-analytic data of science and the post-analytic data of epistemology, any relation between the terminal data of epistemology and those a science arrives at within its special domain and by procedures germane to that domain, is *a fortiori* precluded.

Lack of congruity of science and epistemology follows of course from differentiation of their subject matter. Knowledge about

knowledge is not the same as knowledge about things. Hence variation in the meaning of givenness in relation to the two cognitive spheres.

Thus far, having laid our main stress on the terminal data of epistemology, we have shown that for scientific purposes such data are extraneous and otiose. But the terminal data of epistemology, not unlike those of any other cognitive discipline, presuppose initial data from which they may be derived and to which they must refer. What are the pre-analytic data for a theory of knowledge, and have they any resemblance to those of science? Only a cursory answer must now suffice. We shall revert to the theme later.

The terminal data of a theory of knowledge have mainfestly a derivative status, in the sense of arising in the context of an inquiry directed to what originally arouses the inquiry. But the derivative and the originative often tend to exchange places. For instance: constituents of a thing derived by analysis are said to be its primitive elements, the last in discourse thus becoming first in experience or nature. Such an anomaly, if it is one, may be attenuated by the reflection that "first" and "last" are logical as well as temporal terms: there is nothing odd in speaking of late discoveries of primordial facts or primary principles. Who has not heard of the distinction between a *conceptus essendi* and a *terminus cognoscendi?* Be that as it may, however, within the context of an inquiry, whether scientific or extra-scientific, the originative and the derivative, being largely methodological concepts, may be given fairly stable meanings. What arouses inquiry comes first (in the order of time as well as in the order of discourse), what arises in the conduct of inquiry comes thereafter. An object's constituents, be they ever so primitive as interpreted by genetic or reductive theories, are in the actual process of inquiry nothing but analytic end products. Primitive *for* inquiry, and enjoying on that level indefeasible priority, is a given complex, the only object analysis can cope with.

What comes first in epistemological inquiry is thus not what analysis culminates in but what analysis starts from, and this, its

proper pre-analytic topic, can be nothing else than the phenomenon of cognition. Theories of knowledge differ of course in their choice of initial data, and prejudice in favor of perception as pre-analytic datum *par excellence,* though general, is far from universal. But in order to compare the initial data of science with those of epistemology, we shall regard as if typical such theories that derive their post-analytic data chiefly from analysis of the perceptual situation.

Now, as intimated above, ordinary perception and scientific observation are cognate experiences, so cognate indeed that, with certain qualifications, they may be viewed as if they were species of one another. What is observation if not perception, distinguished from it by being deliberate and not involuntary, selective instead of random, systematic rather than unruly? When we disregard these and like differences, what we have is a common form of apprehension: if scientific observation is perception but refined and controlled, ordinary perception may be construed as crude or rudimentary observation. Would it be too far-fetched to think of them as but different modes and degrees of "watchfulness"? The word lends itself to sundry uses, connoting practical alertness as well as theoretical, vigilance in a biological or cognitive sense. The term "apprehension" partakes of the same felicitous ambiguity, serving to underline the similarity of attentive experience in the proximity of an object whether it arouse dread or inquiry. All this, however, is digression.

What is relevant here is this: if the primary phase of scientific inquiry be observation, objects directly apprehended functioning as initial data, a theory of knowledge based upon perception could be said to have pre-analytic data seemingly akin to those of science, *seemingly* because of certain reservations that will appear presently. Given perception as starting point, and taking the perceived object apart from the perceiving act, epistemology may proceed by analytic examination of the object to derive its constituent parts, whether called sensa or by any other name, in a manner analogous to the way in which observed facts or events, differentiated from the process of observing them, become for any science objects of more

minute or deeper study, and one ultimately culminating in some explanatory hypothesis or theory. Conceivably the same perceived or observed object—for example, a tree—may function as pre-analytic datum alike for a science and a theory of knowledge, their respective post-analytic data necessarily diverging because of the difference in interest and procedure on the part of the two disciplines.

In view of the affinity of perception and observation, the identity of an observed and perceived object is *prima facie* undeniable but in the present context the identity has little or no significance. There are at least two respects in which the same object can obviously not function in the same way as pre-analytic datum for separate disciplines.

(a) If the distinction between reflexive and non-reflexive spheres of cognition be conceded as valid, not the perceived *objects* are the data of epistemology but rather the objects *perceived,* the objects being of interest as such only as the contents of perception. Epistemology would forfeit its status as an autonomous discipline if its approach to objects were not strictly from the side of the knowing process. Knowledge about knowledge is what this discipline aims at; knowledge about things is reserved for the sciences, competition with them by extra-scientific disciplines being not only futile but absurd. The claim to knowledge by any theory of knowledge regarding matters outside its own reflexive area would be downright fatuous. Beyond the confines of its proper province the tenets of epistemology have no cognitive value whatever.

The problem of perception is just a case in point: *things* open to perception are the pre-analytic data not of epistemology but of science: science alone is conversant with the nature of the observable material initially given for inquiry. It is perceptual experience which is the pre-analytic datum of epistemology: the knowledge about such experience advanced by this discipline is knowledge primarily of the nature of a distinct cognitive form, and the things experienced cannot be treated except in relation to

that form as *its* contents or *its* objects. To remove things from their merely perceptual contexts within which epistemology must necessarily locate them, and to study their intrinsic nature in the different contexts to which they severally belong, this is a task devolving exclusively upon the sciences.

(b) Since objects vary in their function as pre-analytic data in accordance with the contexts to which they are relevant, those functioning as such in one discipline may be useless for another. This has a significant bearing on the distinction previously drawn between vertical and horizontal or, less metaphorically, between discrete and continuous fields of inquiry.

Each science, being a special cognitive structure, has for its foundation the pre-analytic data definitive of its subject matter. The determinate character of the initial data of a science fixes the boundary of the domain within which alone it may lay claim to complete autonomy. The vertical image suggests the separation of one domain of specialization from another by such data that exemplify its individual and non-interchangeable subject of investigation, discreteness being another name for this separation. No science looks for its material at random; since its initial data are observational, the requisite acts of observation are directed not at anything and everything but only at such particular things that represent exclusively the special subject of inquiry.

It is otherwise with epistemology. If perceptual cognition is its pre-analytic datum, no particular instance of such cognition can be said to enjoy exclusive pertinency. *Any* perception will do, whether of a star or a rock, to illustrate perceptual apprehension: does it matter by what specific experience one happens to denote this epistemological subject matter? For what is true of any case of perceptual experience is assumed to hold of every other.

The assumption is valid if philosophy is to be differentiated from science. Epistemology, being philosophy in relation to a reflexive area, is horizontal in structure and thus governed by the principle of extensive continuity. The data germane to philosophy are chiefly generic, and reference to the specific is generally intended to be illustrative, in distinction from any science whose

primary data are explicitly specific, the generic data ensuing from inferential or other modes of inquiry having only limited application, limited, that is, to a specified region of facts.

But the concepts of the specific and the generic, like the cognate concepts of the discrete and the continuous, are, we need not repeat, correlative and inseparable. As clearly distinguishable, however, they serve to indicate, as do also the metaphors of vertical and horizontal, that philosophy enjoys a greater freedom than science in the choice of pre-analytic data. And because of this freedom different horizontal constructions admit what in vertical constructions would seem to be precluded—namely, incorporation of each other's subject matter.

The relative latitude in the choice of data, assuming philosophy to possess it, confirms anew the thesis that the philosophic enterprise is a free enterprise. But this latitude raises again, and in crucial form, the issue concerning the cognitive status of philosophy. How could the knowledge pursued by philosophy be compared with that of science if philosophy may boast of free choice not only of methods but of data as well? Yet data a philosophy *must* have, however free it may be in their selection, to qualify as a discipline co-equal with science in search of understanding the nature of things. If so, how basic is the difference between philosophic and non-philosophic data, with reference chiefly to non-reflexive subject matter? These and related themes may now be explored in the light of the present juncture of our discussion.

Chapter VII

FREE AND COMPULSORY DATA

It is of course not difficult to speak in broad terms of philosophic subject matter in contrast with scientific. The distinction I suggested between topics reflexive and non-reflexive enables me to draw a fairly clear boundary between philosophy and science: a discipline whose themes are chiefly self-generated differs radically from one concerned with material of external origin. The distinction, though relative, is particularly important for differentiating the work of science from that of epistemology; and if philosophy were nothing more than theory of knowledge, the boundary between the reflexive and the non-reflexive would present a sharp division of extra-scientific and scientific interests. But the philosophic undertaking is not identical with epistemology: philosophy is also, and perhaps principally, in pursuit of knowledge about things, and when engaged in this task, philosophic subject matter, though not competing or conflicting with scientific, is equally non-reflexive. Non-reflexive fields of inquiry are many and various; those the sciences specialize in are discrete or vertical, while such as philosophies take possession of have a sweep essentially continuous or horizontal. Within the wide range of non-reflexive territories, the difference between philosophy and science is, so to speak, dimensional, philosophy being not extra-scientific but rather meta-scientific, going indeed beyond science but merely in extent or degree of generalization. But philosophy does have a subject matter, whatever be its relation to that of science, in virtue of which it is a cognitive discipline neither rivaling nor superseding other cognitive disciplines.

The distinction *between* reflexive and non-reflexive areas—as

well as *within* the non-reflexive between discrete and continuous synopses—is certainly useful for indicating in a summary way how philosophic activity differs from scientific. But what bearing has it on the varieties of philosophic or scientific pursuit? For there is diversity of sciences and diversity of philosophies, a diversity having to do mainly if not exclusively with definite subject matter. And no subject matter can be identified as falling within an autonomous region of inquiry except through data that define or denote it.

Subject matter and data are terms often employed as if they were interchangeable. Although intimately related, they are also distinct, and the intimacy of the relation must not be allowed to obscure the distinction. Speaking succinctly, I understand by subject matter the class of objects comprised within a single domain of inquiry, and I understand by data (a) such particular instances of the class to which alone inquiry can be initially directed, and (b) results germane to the class such as may be progressively attained through the conduct of inquiry.

Astronomy, for example, comprehends all the heavenly bodies. These are objects with specific as well as generic traits, open to investigation about their varieties, constitutions, magnitudes, motions, distances, etc. Obviously, the things astronomy is concerned with are not originally given *in toto;* what is given initially is something particular amenable to observation from which inferences may be drawn, calculations made, hypotheses framed, etc. The data called observational and inferential and calculable and hypothetical, and other resultant data, though given in different ways and at different investigative levels, are nevertheless pertinent to an identical subject matter to which the science owes its proper name and cognitive specialty.

The distinctiveness of a cognitive discipline clearly depends on sameness of subject matter and continuity of inquiry, either being impossible if different data, such as those of observation and inference, constituted different kinds of subject matter, and if the operations relative to them were disconnected. The sciences are

not divided by separate items given to unrelated modes of investigation; their division is basically a division of labor relative to specific classes of investigable things. The given is bound up with a complex subject matter as well as with the systematic inquiry pertinent to it. Whatever is said to be given cannot be given except at various but continuous levels of inquiry, serving at every stage or phase of it to indicate or to exemplify what the inquiry is *about.* Being a function in inquiry, and as such it should be considered, the given has a source and value essentially variable.[1]

Nothing indeed is so elliptical as the meaning of the given; its full expression would require use of the three interrelated prepositions made familiar by Lincoln. For anything given is a datum *of* a subject matter, a datum *for* inquiry, and a datum *by* inquiry. Whence the importance of the distinction already made and often reiterated between pre-analytic and post-analytic data. Both sets of data (to vary the prepositions) signify that which a subject of inquiry can alone be given *in,* the former set given *at* the inchoate phase of inquiry, the latter *through* its progressive operations.

Of the two sets of data, the first would appear to be more crucial for the career of a cognitive discipline. For pre-analytic data have the twofold function of serving (a) as the *only* data in which the subject matter must be originally present or presented and (b) as the *very* data in which the subsequent status of the subject matter is latent, depending as it does upon whatever may be given through certain operations relative to them. In other words, there can exist for any discipline no subject matter not implicated in some initially given situation or occasion provocative of inquiry; and nothing further can be given by means of inquiry unless given in relation to prior provocations of it. The pre-analytic data of a discipline (once denoted or defined) contain in embryo, as it were, the discipline's characteristic topics and objectives.

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[1] Failure to recognize the given as variable involves the fallacy stated by John Dewey in general terms as "the conversion of a function in inquiry into an independent structure." *Logic:* The Theory of Inquiry, Henry Holt and Company, New York, p. 149.

For topical differentiation of the sciences, i.e., differentiation of their areas of specialization, reference to pre-analytic data, in the sense here considered, is of decisive importance. The very names of the sciences—from astronomy to zoölogy—suggest the pre-analytic data in which their cognitive pursuits have their origin. The matters the sciences set out to specialize in are determined if not predetermined by their incipient data of inquiry.

Data serving as scientific points of departure are generally held to be of the observational kind; indeed, the assumption that the given is given initially to be observed seems axiomatic for those sciences designated as "empirical." Accordingly, if scientific knowledge is supposed to have its roots in observation, and if observational data are those in which alone scientific subject matter can originally appear, a field of scientific specialization is seemingly fixed in advance by data taken as primary, in a temporal sense as well as evidential, scientific knowledge being knowledge of a subject matter implicit in the first move made in the conduct of inquiry.

Astronomy, to use this illustration again, if concerned with the stars, is concerned with them as given in the first place to observation; the inchoate data, which define the area of its ensuing and progressive investigations, astronomy can never abandon without withdrawing from its proper sphere of cognitive interest; and whatever the results obtained and however circuitous the procedures for obtaining them, they can have no other frame of reference than the perceptible "star-sown vault of heaven" with which inquiry must begin and to which alone it is ultimately relevant. Astronomy is no exception. The observed data of every science adumbrate the contours of its special field, and all that the field contains is derivable from or discoverable in the initial data. This is but a corollary from the postulate that scientific inquiry is one proceeding from the observed or observable; and that which is given in non-observational ways, whether by means of inference or conception or any other "discursive" process, must have its source or ground in appropriate data of observation.

The priority which observation enjoys in scientific inquiry af-

fords justification for viewing science as continuous with ordinary cognition usually subsumed under the notion of common sense. The continuity appears to be twofold: (a) the observational approach to things, as already noted, is the same as the perceptual, the act of perception being of course identifiable with that of observation only as a function in inquiry, since it is subject to deliberate direction and systematic control; (b) the objects functioning as data of observation are the same as the objects commonly apprehended, the points of departure for scientific inquiry being the things within everyone's apprehensible reach. In other words, the pre-analytic data of every science are the facts we habitually encounter and scientific observation does not differ in kind from vulgar perception except in degrees of concentration, acuity, accuracy, etc.

The continuity of the sciences with common sense, at least on the elementary levels of inquiry, throws light on their division of labor in accordance with the principle of topical differentiation. The material available for cognitive exploration, apportioned, as it were, among the various sciences, corresponds to the perceptible world of common sense, a world full of a number of things—the stars, the seas, the mountains, the plants, the animals, and so on. The partition of the sciences by their sundry and sundered data thus comports with the commonly accepted partition of nature. Nature's partition, it is important to remark, is not the work of science; science finds it "ready-made," so to speak, and stereotyped. The postulate of nature's discreteness and heterogeneity is initially undeniable, whatever countervailing aspects it might reveal in the sequel. For the relatively fixed boundaries of the sciences there is, therefore, a "natural" origin and basis; the division of their subject matter, as denoted by their non-interchangeable pre-analytic data, represents an inheritance and prolongation of pre-scientific ways of knowing.

Adopting the separation of things as attested by ordinary perception, the sciences are necessarily limited in their choice of pre-analytic data; and it is these data, gifts of common sense, to speak of them thus, which set bounds to their several fields of specializa-

tion. A scientific subject matter is therefore always an open secret, exemplifiable as it originally is by overt objects of observation. Much of course happens to such objects in subsequent inquiry, as a result of discrimination and inference and judgment and hypothesis and theory; and although the status they acquire at the different stages of inquiry may seem remote from their observational base, the distance however great between pre-analytic and post-analytic data can never be construed as a breach in their continuity, unless it be absurdly assumed that what is given at each phase of a sustained investigation constitutes a separate subject matter. The problem of tracing the relevant connections between the various data relative to the intrinsic nature of its subject is one with which every science is perennially confronted.

A comparison of scientific and philosophic disciplines as regards their pre-analytic data brings to the fore once again the issue concerning the cognitive status of philosophy. Any explorable subject must, as we have seen, be initially present in certain data denoting or exemplifying it; if philosophy is to justify its claim to independence in quest of knowledge, it too must possess a distinct subject, whether reflexive or non-reflexive, given in the first place in manifest or exemplary form. Without subject matter, no inquiry; without data, no subject matter. The general validity of this formula can scarcely be disputed. Its relation to scientific disciplines is sufficiently obvious. But how does it apply to philosophic disciplines? What are a philosopher's pre-analytic data, in the sense of being (a) points of departure for his inquiry and (b) clues or specimens of his preëmptive subject matter? To this question we must give full attention.

A basic difference between the initial data of science and those of philosophy has to do with the problem of choice.

No science, it hardly needs saying, is completely free to choose its pre-analytic data, being the science it is in virtue of a particular subject matter present in and delineated by such data. A field of specialization is determined by specific material to be investigated, and what is given of it to begin with corresponds to an enclave of natural phenomena as perceived at the level of

common sense. The selection of pre-analytic data by a science is thus strictly confined to those considered exemplary of its proper subject matter.

This is clearly not the philosophic picture. There is in philosophy no natural allocation of fields of specialization upon which the work of science chiefly depends. A science cannot invade the field of another without running counter to the principle of divided labor. Such invasion philosophers can engage in with impunity. To be sure, philosophy has its different familiar "branches," but within each the subject matter is of the kind that permits competition rather than division of labor. In the absence of a consensus of opinion about the nature or delimitation of the contents pertaining to a particular branch of inquiry, be it ethics or metaphysics, the free play of speculative ideas is without parallel in science. For not only do philosophers lay claim to the right to define in incompatible ways the themes to be explored, they exercise equal liberty in placing opposed constructions upon topics stipulated in advance as having the same content. No wonder free choice of pre-analytic data is in philosophy virtually unlimited.

Free choice of pre-analytic data is apparent in those branches of philosophy whose subject matter—as, for example, in epistemology—is of the reflexive kind. Epistemology, which is an inquiry into the nature of knowledge, is certainly distinct from inquiry into the nature of things. The study of things on their merit, so to speak, such as the sciences pursue, is not one to which epistemology can lay claim to competence; its major interest is not in external objects but rather in the intrinsic states or acts of cognition relative to them. Or, as reiterated before, cognition itself here constitutes the object of cognition, and only as a reflexive discipline can epistemology become differentiated from the sciences. The pre-analytic data of this discipline must thus accord with its subject matter. And since this is co-extensive with cognition in all its variants, anything comprehended or subsumed under cognition may initially function in inquiry as given in the twofold way indicated, to wit, as instituting the inquiry and as typifying the subject matter.

Epistemology is thus under no necessity to select its data exclusively from the perceptual field. Non-perceptual aspects of the cognitive situation could equally provide suitable points of departure for a theory of knowledge. For knowledge as it flourishes appears on different levels and in different ways, having varied relations to diverse objects, and nothing prevents choice of any of its features in satisfaction of the requirement for pre-analytic data.

Such liberty of choice, we may remark in passing, has a significant bearing on the conception of philosophy as a free enterprise in the sense previously adumbrated. To this conception, with particular emphasis on free selection of data, we shall revert later. Meanwhile, let us proceed with our discussion of such free selection relevant to epistemology.

Confining ourselves to the perceptual field as the source of pre-analytic data for a theory of knowledge, it is obvious that no particular perception need to be chosen in preference over any other as exemplifying that field. The choice is unrestricted. Since perception itself is the object of study, it matters not at all whether the pre-analytic data selected be visual or auditory or any other. Nor does it matter, assuming the perceptions selected to represent one sensory kind alone, what they happen to be the perceptions of; clouds or crystals, mountains or seas, mice or men, will equally do as perceived or perceivable samples. For what is true of a given perception, whatever its sensory nature or specific object, is held to be a true index to the perceptual field generally. This follows from the diffuse subject matter of epistemology, even though it be limited solely to perceptual cognition or even to but one sensory area, the subject matter being of the sort that can be taken as given in any of its denotable or definable specimens.

The difference between observation as method of inquiry and perception as subject matter of inquiry shows in perhaps the strongest relief the contrast between restricted and unrestricted choice of pre-analytic data.

Although for the institution of inquiry observation is a primary procedure common to all natural or empirical sciences, the data

observed, being data of heterogeneous subject matter, are clearly differentiated, unless we assume the possibility of removing the relatively fixed boundaries that separate the various domains of specialization. A scientific datum is something extant and not the process of noting it; what should be chosen for initial observation depends on the class of phenomena comprising the cognitive province in question. To say that a science is not at liberty to observe things at random simply means that the data observed must denote the subject matter to which the science is bound. But if observation itself becomes the theme studied, then any instance of attentive experience may function as pre-analytic datum, the freedom to range among all observed and observable facts remaining unchecked.

Now this unimpeded liberty a theory of perception fully enjoys. Such a theory, it is well to remember, can convey nothing authoritative about the things perceived save as they enter into the perceptual field to which alone its jurisdiction extends, inquiry into things as things being reserved for the sciences. Of the perceptual field, however, the preëmptive domain of epistemology, pre-analytic data may be summoned at will with no restraint on freedom of choice, and summoned from every quarter regardless of differences in sensory materials or sensory stimuli. Indeed, any perception of any object constitutes an appropriate datum of epistemological subject matter.

Because of the noted resemblance of perception and observation, the difference relating to choice of data between observation as function in inquiry and observation as theme of inquiry needs but to be mentioned to become obvious. Equally obvious but not quite so simple is the same situation construed in non-perceptual terms. Consider judgment. Judgment, too, may be viewed either as operation in or as object of cognition.

In any scientific discipline the exercise of judgment is certainly restricted to a specific context: data of judgment are data of subject matter. Aimless judgment is here ruled out as much as indiscriminate observation—it must likewise refer to the given in a particular area of investigation. In other words, the significance

or validity of a scientific judgment ultimately hinges on the particular content it embodies.

Not so in epistemology. In the context of that discipline judgment signifies a discursive act germane to any content; as focal in analytic or critical study judgment becomes converted into an object of judgment, so generic in scope that no particular specimen of this form of cognition enjoys preference over any other in serving as datum for the institution of inquiry. Any judgment of anything may be taken as a given sample of this theme pertinent to epistemology.[2]

Further consideration of judgment would only deflect attention from the main point, namely, that in choice of data no science can have the latitude possessed by epistemology. Perception and judgment are of course not exceptional: any mode of cognition may be turned into a topic of cognition. And whatever is given, is given to be complied with, on the assumption that subject matter is prior to inquiry and not *vice versa,* including inquiry itself when its processes constitute, as they do in certain theories of knowledge, the contents of inquiry. But whereas a discipline investigating a subject other than inquiry must submit to data such as the instituted procedures bring to light, a discipline concerned with inquiry into inquiry is free to view its subject matter as given in any randomly selected procedure regardless of specific content or objective.

A scientific theory, for example, is limited in application to whatever falls within a particular area of investigation, the theory clearly being about something not itself. But a theory about theory, which is certainly entertainable, will apply indifferently to any and every species of the genus, choice among exemplary data of the subject being unrestricted.

What a scientific theory is about generally determines its sense; because the requisite data must accord with the subject matter given in or through them, the data marshalled, whether, for in-

[2] What bearing this has on judgment as logical subject matter is an issue involving the distinction and relation between logic and theory of knowledge. The theme is broached in Chapter XIV.

stance, related to the theory of the propagation of light or that of the origin of species, can be drawn only from a restricted field, with the result that what is relevant to one field has no direct bearing upon any other.[3]

But if theory itself be what a theory is about, data required for it may be selected at random, all equal as regards exemplifiability of the subject matter, a corpuscular having no advantage over a wave theory of light or the evolutionary theory of species over the theory of their special creation. Indeed, any theory of anything will do as datum suitable for the purpose of initiating inquiry into the general topic it is held to represent.

The point here insisted upon requires no elaboration: free choice of data on the part of epistemology, as contrasted with the limited choice open to science, is implicit in the reflexive nature of its subject matter. The knowledge pursued in epistemology is concerned with the generic traits of the specific forms and processes of knowledge. Even though but one mode of knowing—for example, the perceptual—be the principal or exclusive subject of investigation, the generic features of it constitute the chief interest. It goes without saying that any particular instance chosen to represent any mode of knowing can never be completely representative, just as no species anywhere, unless it be considered *sui generis,* can be more than a partial image of its genus.

The problem of the distinction and relation between the specific and generic, amenable as it is to different interpretations, need not be dwelt upon at present. It will, however, not be readily gainsaid that the study of the generic in connection with any subject matter can hardly be undertaken except in and through its specific manifestations. How (to revert to epistemology) examine perception as such unless instances are available to exhibit its topical delimitation and typical nature? What holds of per-

[3] The adjective *direct* is here important. Whatever relation a theory of light may be found to have to a theory of the origin of species forms no part of it. It will scarce be asserted, for instance, that the corpuscular theory has inherently any close connection either with the theory of evolution or with the theory of special creation.

ception, whose generic aspects or constituents or operations can be found only by discerning them in specific cases, whether visual or auditory or other, applies to every mode of cognition selected for epistemological treatment. To vary the vocabulary, no subject matter can be given save in the particulars revealing it. This contention is germane to all inquiry, scientific as well as non-scientific, on the supposition that given for inquiry is always something exemplifiable.

Whereas, however, the particulars exemplary of the non-reflexive specialty of a science have a definite locus, representing as they do a delimited segment of nature preëmpted for exploration, the particulars illustrative of the reflexive area of epistemology are not confined to any denotable habitation, since nothing external determines their selection as pre-analytic data. The knowledge sought being about knowledge, the subject matter may be looked for in any and every cognitional specimen chosen without let or hindrance.

If epistemology were the sole species of philosophy, arbitrary selection of data would not jeopardize the conception of philosophy as a cognitive undertaking. For here is ascertainable knowledge of a subject matter open to inquiry by an appropriate discipline, and diffuse abundance of relevant data does not militate against its possibility. Polemic against the cognitive claims made in behalf of philosophy usually takes the form of casting aspersion on a subject matter not amenable to procedures followed by the sciences. It is true, of course, that canons governing the sciences cannot be made to apply to philosophic cognition. But whence the justification of rejecting as non-cognitive non-scientific zones of study? Such zones exist, and absence of restraint upon choice of data is seemingly no bar to their status as disciplines concerned with significant subject matter. A subject matter of the reflexive sort, though given in specimens freely culled from contexts not predetermined regarding their width of range, is a subject matter nonetheless. It would be dogmatic if not foolish to withhold cognitive value from a philosophy of knowledge because its pre-analytic data, unlike those of science, present the subject matter in

indefinite profusion and variable extent. Epistemology offers no knowledge of the things science is intent upon but there are things untouched by science which only epistemology can know.

Such considerations, however, are but pertinent when the cognitive field reserved for philosophy is of the reflexive type, when, in other words, philosophy is nothing more than philosophy of knowledge. How does free choice of data affect the claims of philosophy in non-reflexive areas, in areas contiguous or continuous with those of science?

The question goes to the root of the matter. If philosophy is permitted to choose data of its own but cognate in non-reflexiveness with scientific data, its cognitive claims become more seriously challengeable. The enjoyment by philosophy of a liberty, not to say a licence, denied to science, would appear warranted only in connection with subject matter extraneous to science. How justify it when philosophic subject matter is affiliated with scientific? Yet how singular an affiliation, seeing that, unlike science, philosophy may examine the nature of things in non-reflexive media without prior submission to compulsory data! Or, to restate the issue in another form, how can free and circumscribed choice of pre-analytic data have reference to congeneric domains of inquiry?

The cognitive claims of philosophy are thus seemingly vitiated by a paradox unless they constitute claims to a subject matter given in the first place as scientific subject matter is given, to wit, in stubborn facts or particular states of affairs or specific problematic situations, such and similar data being requisite for instituting inquiry from a definite base and in a definite direction. The philosophic demand for loose data is incompatible with the need for restricted data from which the sciences must start to be the special and accredited disciplines they are.

Non-compulsory selection of philosophic data may, however, be argued for not in spite but because of the resemblance between philosophy and science as regards non-reflexiveness of subject matter. Freedom to choose the given, if I may say so, is implicit in

the dimensional division of cognitive labor. However we designate the line of division, whether as vertical and horizontal or as discrete and continuous or as specific and generic, the cognitive claims of philosophy can find no justification except in terms of a separate dimension of inquiry. These claims rest on the assumption that the interest in continuity is co-equal with the interest in discreteness, and that the quest for the generic traits of things is no less legitimate than the study of them by procedures chiefly designed for discovery of their specific natures and ways of operation.

But (to revert to an earlier statement) the discrete and the continuous or the specific and the generic are concepts so correlative that they require reference to each other for their pregnant meaning and proper use. To speak of philosophy as concerned with the nature of things seen under the aspect of continuity or generality[4] is indeed to lay stress on one of the correlatives but not to the other's exclusion, the difference between philosophy and science being in this respect a difference of degree. Each science affords knowledge of limited continuities or generalities—limited, that is, to its special subject matter. The search for more extensive generalities or continuities, aiming not to contravene or to supersede the work of science, is the philosopher's prerogative. And if we label as meta-scientific the process of going beyond science in greater comprehensiveness, there is no scandal in the epithet. On doctrinaire grounds alone can it be asserted that syntheses wider in range than scientific syntheses (meaning by "scientific syntheses" those achieved by the several sciences severally) are devoid of cognitive significance.

In characterizing as dimensional the division of science and philosophy I have deliberately omitted mention of the images the adjective naturally brings to mind. Vertical and horizontal are tropes strikingly apposite here. I have refrained from using them because of some scruple not to rely too heavily on pictorial language. Yet with the aid of these spatial metaphors the contention advanced acquires strong reinforcement and added clarifica-

[4] I am using generality as synonym for the less euphonious "genericalness."

tion, suggesting as they do different gradations of generality and continuity.

A special science conceived as vertical in structure, though separate and hence discrete in relation to any other, constitutes a body of knowledge general and continuous in sweep as regards its own specific subject matter. The pervasive conceptions of things embodied in a particular science are, so to speak, intra-vertical; inter-vertical considerations lie outside a vertical context. Correlation or interrelation of the sciences is clearly a horizontal matter. It is philosophy which moves on a horizontal plane because philosophy is the discipline in which the notions of continuity and generality receive maximum applicability. To speak then of a conspectus of things as explicitly horizontal is to indicate a cognitive intent of countervailing the fragmentation of the world instituted by common sense and the codification of the same perfected by the supervening scientific disciplines.

These remarks may throw light on the exercise of liberty in the selection of pre-analytic data vouchsafed to philosophers. Such liberty no scientists can claim because of the specialty of their subject matter. The word specialty tells the story. For what is given as special cannot be given save as discrete in a vertical area of inquiry.[5] We should never designate a subject matter as special unless given for inquiry in determinate ways, and since scientific inquiry usually begins by way of observation, incipient data are identical with observational ones. Requirement for observation apart (and observation is an act performable only in relation to something specific) the situation concerning choice of basal data seems to be this: the more special the data the narrower the choice, the less special the wider the choice. The sciences differ of course in degrees of specialization, some fields being intrinsically broader than others, and though vertical in construction, they are not equal in "thickness" of content (if we may continue to speak in metaphors). The philosophic pursuit, relevant to another dimension, is concerned with materials amenable to various degrees of

[5] Special and specific and discrete and vertical are here to be taken as words so similar in connotation that they become virtually interchangeable.

generalization, and selection of data will naturally vary in accordance with the breadth of the field. Just as sciences differ in degrees of concentration, so do philosophies differ in degrees of expansion, some going beyond others in search of horizontal continuity and generality.

Latitude in choice of data is thus proportional to the scope of cognitive inquiry. With respect to non-reflexive subject matter, science and philosophy differ in extent of synoptic range: the discrete "topics" of the former provide material for assimilation within the latter's more inclusive generalizations. And because the material for assimilation is so diffuse philosophy enjoys a liberty nearly unimpeded to select data requisite for its own horizontal task.

Many illustrations but too complicated to be dealt with here naturally suggest themselves. To illustrate the point focal in the present context I shall confine myself to summary treatment of an obvious but pertinent theme.

The unity of science, which does not concern any particular science, is a theme preëminently philosophic, open to various interpretations from different points of view. What is noteworthy here is its "dimensional" aspect, for the interest in the unity of science is clearly an interest in the continuity or synthesis of special pursuits running their cognitive course in vertical media. The unity of science thus exemplifies a distinct subject of inquiry generic in scope; the need for it is dictated by the dispersal of knowledge among diverse disciplines, each intent upon its achievements in relative detachment from the others. Of such an exploratory subject data are available in profusion; scattered as they are so far and wide, the embarrassment of choice is truly embarrassing.

What, it is important to ask, may be taken as given in connection with this subject? And what are the means by which the given in this context may be discerned and justified?

It goes without saying that the pre-analytic data for a philosophy of science are not of the observational kind. With respect to the demand for observation, how striking is the contrast, at least *prima facie,* between philosophic and scientific inquiry! Compare,

for example, the conception of the unity of the solar system with that of the unity of science. The former requires the support of data elicited at the different stages of astronomic investigation, its adequate expression hinging on all the evidential resources the science can command; yet whatever be the data marshalled in subsequent phases of astronomic study, that which is given for initial inquiry can be nothing else than the celestial bodies revealed to direct apprehension. Attribution of unity to any scientific subject always presupposes denotable specimens of the subject, that is, things generally specifiable in perceptual terms. Of the unity of science, however, we cannot significantly assert that it is a conception grounded originally in things perceived or observed. The particular sciences themselves, the existing noëtic structures in their unequally progressive development, must supply relevant material for their possible unification: bodies of knowledge, unlike the bodies called "heavenly," are not on display as physical objects co-vicinal with a physical observer. Prerequisite data for a philosophy of science are *ab initio* conceptual or discursive. And because a synoptic cognition of the sciences depends on data essentially non-observational, the freedom differently to specify and to construe them is a sort of natural right enjoyed by philosophers.

Study of the unity of science on the basis of data considered eligible involves as pre-condition the activity of comparison. How indeed could the sciences be said to constitute a single cognitive family if some affinity between them were originally undiscoverable? Except for their affinitive traits, whether relating to attitude or method or content, a philosophy of science would be precluded for lack of comparative data. Once, however, adopted as pre-analytic, such data supply the terms for the philosophy conceived, its validity increasing in proportion to the cumulative force of the data attained subsequently. But the comparative data chosen initially are chosen freely: any aspect in respect of which the sciences exhibit some likeness may afford a foundation for a theoretical conspectus of them.

Comparison of the sciences for purposes of their possible synthesis is a task performable in different ways, depending on the

positions assumed and the interests pursued. Crucial here is definition: on what particular inquiry the name of science should be conferred will obviously hinge on the sense given to the name. The definition's breadth or narrowness determines the number and variety of the scientific disciplines as well as their hierarchy. Science may thus be qualified as physical or biological, inorganic or organic, natural or cultural, pure or applied; such and similar terms serving to draw lines of demarcation between sundry species and subspecies. The unity of science (not unlike the unity of art or of religion or of any human activity or interest) is the fruition of discursive thought, varying in character and extent in accordance with the meaning or definition assigned to the unifiable subject. Of science, therefore, different philosophies are constructible, each with some claim to validity on the basis of comparative data freely selected.

Choice of comparative data being free, preference for methodology as basis of comparison has much justification in its favor. Although differing in accordance with differences in specific subject matter, the sciences may plausibly be said to constitute a single class in virtue of procedural similarity; the expression "scientific method" being commonly understood in a generic sense. All disciplines, indeed, be their fields of investigation ever so heterogeneous, may join the family circle of the sciences if in their investigative operations they conform to the canons of a kindred method. By their conduct of inquiry, therefore, no matter what they inquire into, separate disciplines become eligible for membership in the same cognitive genus.

But the operations comprised under the general caption of scientific method are notably various and complex, and not all operations are of equal relevance to all areas of study. If the data for a philosophy of science are to be drawn from a comparison of procedural ways, selection must obviously be made of those characteristic of the practice followed by any and every science. What mode of procedure is more representative or more typical than another? What process instituted by the method of inquiry is so

undeniably generic that a discipline eschewing it would forfeit the name of science? How must search for knowledge uniformly proceed to be viewed as proceeding in a scientific manner?

In the answer to these queries lies the direction in which methodological unity of the sciences might fruitfully be sought.

Of the activities associated with the scientific method the activity of observation seems prerogative, being the denominator, as it were, common to all enterprises distinctly scientific. It is possible to contend that there can be no science in the absence of observational data at the inception if not at the culmination of inquiry. Any inquiry able to dispense with such data might well be considered as having no scientific importance; or, which is the same thing, any subject matter precluded from ever being present to observation would appear *eo ipso* precluded from falling within the purview of science. This of course is not meant to imply complete reduction of all scientific knowledge to the observational level. Yet who will deny that this is the level from which scientific knowledge must always start? Experiment, inference, induction, hypothetical interpretation, theoretical construction—in short, all the ingenious activities upon which scientific knowledge depends require for their relevant exercise reference to something observationally given. To deprive a science of observational data is to subvert its cognitive career.

In spite then of the complexity of the scientific method, that is, in spite of the diverse acts of mind involved in its application, to single out observation as fundamental is eminently justified. In the practice of science, at any rate, priority clearly belongs to the observational mode of apprehension.

It is a mode requisite for directness of approach to things, a directness recognizable by its different aliases, such as sensuous or perceptive or denotative, expressions more or less synonymous with the term empirical, indicating in cognate ways the original source of scientific knowledge. If scientific knowledge is held to be empirical, so held because its roots are in experience, the experience it grows out of in the first place is of the directly verifiable kind.

To be sure, the word empirical has been often used as equivalent to scientific in a less precise or derivative sense, in the sense of designating whatever results may be derived from the observationally given by means of non-observational processes, and when thus used, the term covers the whole complex method to which scientific knowledge owes its refinement and accretion. This method, whether called inductive or experimental or instrumental or operational, is indeed adapted to sundry apprehensions, ranging from the direct to the circuitous. Yet directness of apprehension however attenuated or suspended can actually never be abandoned.

All the processes of mind, no matter how devious, considered essential for the full employment of the scientific method, invariably presuppose some direct experience as their fulcrum or occasion. Thus the process of induction, it scarce needs mention, follows upon and can obviously not precede the observations necessary to set the process in motion. Experiment, too, is a process related to direct experience, and doubly so—it is generally under the guidance of a conception or hypothesis such that could have been prompted only by *prior* observation, and it exemplifies or entails *ulterior* observation under controlled conditions. And what of the processes spoken of as instrumental or operational? Clearly, they would be without empirical significance unless directed to what must originally be present or given in observational experience. The priority of observational experience is seemingly inelectuable: scientific inquiry must have for its starting place something directly apprehended, and to something directly apprehensible it must return for verification of any hypothesis tentatively framed and provisionally entertained.

Because observation is, so to speak, the empirical axis of the scientific method, observation emerges, in being thus pivotal, as a condition manifestly generic. If no particular science can function as such unless its data are grounded in observation, be its subject matter ever so deepened or broadened by inference or generalization, science as genus may legitimately be viewed in relation to a procedural canon binding equally upon all the species. A non-observational science would thus be tantamount to a contradiction

in terms. And in proportion as a science is more firmly anchored in its observational base, the greater its cognitive claim. Furthermore, what better criterion for a hierarchy of the sciences than security and amplitude of observation? Direct evidence (whether at the initial or terminal phases of inquiry) being a matter of degree, the more overtly denotable its observational data and the more richly diversified, the "higher" the science.

Briefly, sciences differ in relative proximity to their empirical source. The further a science departs from direct apprehension of its data, the less empirical its subject matter becomes; disciplines operating at the maximum distance from their observational moorings must well-nigh reach the vanishing point in the empirical content of their objects. Observation, being the empirical core of scientific cognition, readily lends itself as a generic principle by which to order and unify the various sciences.

But to reduce the generic meaning of science to observation alone is to reduce it to a procedural requirement admittedly necessary but admittedly also insufficient. The scientific method must satisfy conditions other than observation to serve as method for the attainment of knowledge amenable likewise to standards drawn from discursive thought. And when the sufficient as well as the necessary conditions are included in the notion of scientific cognition, the generic meaning of science undergoes shifts and changes, depending on the nature of the conditions and the degree of their sufficiency. Here latitude in philosophic interpretation is certainly wide.

It is generally conceded that procedures considered essential for some disciplines are not applicable to others. Do the procedures requisite for the physical sciences possess equal relevance for the biological? And can the so-called social sciences achieve generic parity with the natural sciences by imitating or emulating their special modes of inquiry? These questions are old and familiar. The fact is that no single procedure, be it analysis or measurement or experiment or deduction, can be laid down as a condition *sine qua non* for each and every science.

Accordingly, choice of the generic requirements of scientific knowledge is a free choice; those selected as generic in conformity with one philosophy of science will appear as special from the standpoint of another. Conceptions of the unity of science based upon comparative methodology must inevitably vary, the data marshalled for them being non-compulsory.

What degree of rigorousness or exactness in its procedures should a discipline exhibit to qualify as a science? In what sense, for example, is psychology a science (or economics or history or anthropology or sociology) congeneric, let us say, with astronomy or physics? To this question there is more than one answer if the unity of science is regarded as the same as the unity of method governing inquiry in all of its species. Whether a given discipline is or is not a true species cannot be determined except in relation to the generic traits of the method which are definable as such in various ways.

The interpretation of the unity of science as the unity of method represents but one interpretation of the subject. But unity can be sought in content as well as method: comparative study of subject matter, too, may yield data for different generic conceptions of science.

This is a more difficult matter: it concerns ontology rather than methodology. The generic nature of things amenable to scientific knowledge is co-equal in importance with their specific differentiation. There is no science without generic concepts relative to its own subject matter. But whether *all* scientific subject matter is somehow fundamentally homogeneous, this is quite another story, and one patently meta-scientific.

Assuming, for example, that the subject matter of biology is as "real" as that of physics, do organic and inorganic phenomena exemplify different genera of being or but different species of a common genus? If the latter, what are the pervasive traits attributable to animate and inanimate existences? The same question is apposite whatever be the principle of division among the sciences. The ontological issue, which no science need raise, be-

comes paramount for philosophy: it is the issue whether the things comprised within the separate domains of scientific study are susceptible of interpretation in homologous terms. It is quite possible to think of the unity of science as correlative with the unity of nature. Where else indeed is to be found nature's integrity if not as revealed and, as it were, reflected in the integration by philosophy of the different contents of the different sciences?

This is not the place to speak of philosophic attempts often made to interpret the unity of science as implying or presupposing the unity of nature. Comparative data are not wanting, derivable from the contents of the special sciences, for the task of reducing the diversity of things to a congeneric ontology. Familiar is the device of grafting upon some sciences categories or principles germane to others, with the result that observed phenomena are made to surrender their apparent heterogeneity in favor of a covert homogeneity. Thus, for example, in the interest of ontological unity, the biological sciences may be assimilated with the physical or the physical with the biological, the ensuing philosophy of nature becoming patterned after the structure or behavior of the inorganic (mechanism) or after that of the organic (vitalism).[6]

The conception of nature's universal characters and ways of operation must obviously vary in accordance with the interpretation of the unity of science. The ontological order and connection of scientific disciplines, no less than the methodological, embodies the speculative position to which alone some disciplines owe their putative priority over others. In sum, for any philosophy of science, whether based on procedure or content, there is abundant choice of comparative data, the sciences themselves exercising no jurisdiction over their preferential claims.

Further implications of the notion of scientific unity must be deferred for the present. They will be dwelt upon at a deeper level in the next chapter. It will be recalled, however, that the

[6] Allusion was made in Chapter III, "Primacy and Priority," to the fallacy of confusing species and genus of which the tendency to use one kind of science as paradigmatic or privileged is a signal illustration.

topic has so far been introduced merely for the purpose of illustrating a philosophic subject matter the initial data of which are non-compulsory. Non-compulsoriness in selection of data is characteristic of philosophic inquiry generally. It hardly needs saying that there can be no cognitive inquiry at all, be it scientific or philosophic, in the absence of pre-analytic data: the necessity for such data is universal, for by means of them alone can a subject matter be identified. Free data, too, are data of subject matter. The distinction between free and compulsory data epitomizes in clear-cut fashion one line of division between scientific and philosophic disciplines. This, as already intimated, ultimately relates to the fundamental difference in cognitive dimensions.

Chapter VIII

DIMENSIONS OF COGNITIVE DISCOURSE

The interest in the unity of science, as the preceding cursory treatment of it was intended to show, illustrates an interest clearly cognitive though non-scientific or (if one prefers) non-scientific yet cognitive.

The unity of science—certainly a legitimate subject of study—does not fall within the purview of any particular science. Is there an actual discipline of which we might properly speak as "the science of science"?[1] Unless frankly offered as figure of speech the designation would seem a singular misnomer. The conception of a discipline so named could not avoid being infected with a fundamental bias. For what could be more aslant than the preëmptive use of the term "science" with all its honorific connotations as synonym for a particular philosophy embodying a preferential theory of knowledge or of value? Indeed, what accredited science has a subject matter consisting entirely of itself? To describe as "science" a philosophy of science is to employ the descriptive word with unconscionable latitude.

Furthermore, the unity of science is a subject not amenable to inquiry by the scientific method, data of the observational kind being here completely lacking. If the separate sciences are to function as the given objects to be unified, they are objects different from those with which scientific knowledge is concerned. The latter must in the first instance satisfy the requirement of perceivability, a requirement to which the objects of a philosophy of a science need not—indeed cannot—conform.

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[1] The expression is employed by Ralph Barton Perry in his *Realms of Value*, Harvard University Press, 1954. Chapter XVII is entitled "Science and the Science of Science."

Moreover, the unity of science is a conception unverifiable by the sort of evidence upon which the sciences generally rely. Of the genus of science no single hypothesis can ever be so compelling that competitive hypotheses become virtually precluded. Many interpretations are here equally plausible, there being no similar data to which they must perforce appeal. Generalizations about science vary in accordance with the data upon which they are based. And since the data are free and not strictly commensurable, incompatible versions of a philosophy of science must be looked upon as quite "normal."

And yet, search for the unity of science is a cognitive one. The discipline engaged in the search can be no other than the philosophic—and it had better be so named—distinguished from the scientific disciplines in subject matter and procedure.

The cognitive interest in the unity of science must be dilated on somewhat further.

(a) That the interest *of* science is cognitive none will be rash enough to dispute: the essential purpose of a science is to know all that is ascertainable in its special field. Its ulterior purposes, though numerous and eventful, are but secondary. How strange a science if the business of knowing were not its primary business. Equally cognitive, however, is the interest *in* science; knowledge of its intrinsic nature, regardless of its non-cognitive appurtenances or concomitants, is the result of inquiry indeed other, but no less objective, than the inquiry instituted by every scientific discipline relative to its given material. The things known through physics, for example, are not identical with the things known about physics.

(b) In general, what we can know *through* science and what we may know *about* science can thus not be made to coincide. By means of science we succeed in knowing such objects only as are open to study by prescribed procedures. Is science itself an object of scientific study? The answer chiefly depends on the degree of latitude allowed philosophers to interpret the meaning of science. At any rate, knowledge regarding the extent and limits of the scientific method, whatever be the means for attaining this knowledge, differs in dimension from the knowledge

the several sciences afford severally. If knowledge about science be admitted as possible at all, such knowledge, which is obviously concerned with science as genus, must necessarily exceed in scope the knowledge aimed at by any of its species.

(c) Knowledge about science as distinct from knowledge through science can take different directions. All depends on whether the cognitive interest in science is chiefly an interest in its method or content. Theories of science must accordingly vary in orientation. Inquiry into the generic features of scientific modes of procedure will be commonly pursued in close connection with issues in epistemology, while examination of the pervasive traits pertaining to the diversities of scientific subject matter will ordinarily be undertaken in conjunction with problems in ontology. To be sure, the two interests are not mutually exclusive, though the accent may fall more heavily on the one or the other; but the distinction between them suffers no loss in validity on account of their actual or possible relations. Be that as it may, however, the interpretation of the unity of science, whether attempted by votaries of epistemology or by those of ontology, satisfies a cognitive need, the need for ascertaining the generic ways of knowing or the generic ways of being such as the sciences might be made to reveal.

The notion of scientific unity, we must emphasize again, is not a scientific notion. It is a unity of which no science can take cognizance by techniques germane to its specialty. Hence these consequences: either (a) the unity sought not being ascertainable by science itself is a topic of pseudo-cognition, or else (b) the unity conceived represents a supervening cognition other than scientific. According to the first alternative, ascription of generic traits to science constitutes a futile activity if not controlled by the scientific method, each separate science, in virtue of its special subject and special procedure, appearing as if it were *sui generis;* in conformity with the second, the generic aspects of science, based upon comparison of the means or the materials of inquiry, become indeed objects of cognition but only by a discipline fit to

interpret them. Such a discipline explicitly meta-scientific has to do with a dimension of knowledge not alien to science but complementary to it.

For the dimension of philosophic knowledge certain terms are available descriptive of its breadth: we may speak of it as having reference to generality or continuity or wholeness. Expressions such as these play different though related roles in synoptic interpretation. But the cognitive dimension they suggest is not peculiar to philosophy: science, too, is synoptic, for within each of its special domains, as noted earlier, cognition depends on a *vue d'ensemble* of distinct modes and data of inquiry. No science can relinquish large ideas in the interpretation of its subject—indeed, how could it grow into a "body" of knowledge, and the figure is felicitous, without the aid of comprehensive hypotheses or theories? Although the initially given in any area of specialization must be specific or particular, the objective of scientific knowledge is to describe or explain the nature of its objects in terms of generic properties, causal relations, continuous processes, recurrent forms, general laws. Neither science nor philosophy can ever dispense with synoptic concepts, their extensibility varying with the contexts in which they are operative. What is needed to understand their difference in synoptic function is the possibility of attaching to them certain qualifying predicates. Between scientific and philosophic knowledge, to put the matter succinctly, the dimensional distinction is chiefly and ultimately adjectival.

Although synoptic concepts are requisite alike for science and philosophy, decisive here is their qualification. Thus it is not by means of the concept of generality as such that philosophic knowledge can be distinguished from scientific; no significant inquiry can ultimately function without it. What cognitive discipline does not abound in generalities? But generalities are unequal in range. Such inequality is of course relative, applying to scientific as well as philosophic generalities, since the area of any inquiry may be shown to be more extensive than another. The topics of philosophy are not all of the same magnitude and neither are those of science. But the difference in levels of generality, whether *within* philos-

ophy or *within* science, constitutes a separate question which need not here be considered as strictly relevant.

What at present must be noted as crucial is the difference in degree of generality *between* scientific and philosophic cognition. That philosophic synopses should be more sweeping than scientific can hardly come as a surprise. The subjects of philosophic inquiry are *ab initio* of a generic nature, all specific matters falling within the domains of the several sciences. The external or extraneous relations of the sciences, in the absence of which they would cease to be non-competitive and autonomous, ensue, as we have seen, from the principle of topical differentiation. Inalienable possession of subject matter is the rightful demand of every cognitive discipline. The division of the sciences, such for example as that between astronomy and physiology, is, so to speak, a territorial division. No discipline can appropriate the given facts of another without claiming jurisdiction over areas of exploration beyond its ken. Indeed, the very possibility of scientific inquiry would be abandoned if the various disciplines could, as it were, grant one another extra-territorial rights over their respective subjects. The imperative that each science have a special field free from invasion by another is well recognized as binding and seldom disregarded. Obviously, however, the territory over which philosophy exercises cognitive jurisdiction must comprise subjects not exchangeable for those specialized in by the sciences, topical differentiation being a principle presupposed for all inquiry. Between scientific and philosophic cognition the difference could be expressed by saying that the former is rooted primarily in the specific, the latter in the generic.

Of course, if the specific and the determinate are "harmoniously confused" and regarded as if they were synonymous, then any subject matter of any discipline acquires specificity by the grace of definition. But the issues involved in latitudinarian views of definition, important though they are, have no direct bearing, as the sequel will show, on the present discussion.

The determinateness of philosophic topics, terminological dif-

ficulties aside, is generally acknowledged. The branches of philosophic learning are fairly sharply differentiated and not merely by linguistic licence. The distinction between ethics and epistemology, for example, is a distinction chiefly of content. Their principal themes require modes of articulation adapted to them. Reduction of these disciplines to each other would be tantamount to a reduction to the absurd. And what *can* insure their irreducibility if not determinateness of subject matter? The data (and hence the idioms) of ethics and epistemology remain inequatable. And yet philosophic determinateness cannot be made to coincide with scientific.[2]

There is one reason seemingly decisive for not subsuming under the term specific all determinate subjects. It is science which has exclusive possession of the term. And no scruple of diction alone dictates the statement. The fact is that scientific cognition contains the specific in a sense—and the sense is impressive—not attributable to philosophic; the latter's content enjoys the distinction of non-specific determinateness. And to say this is not to utter a paradox.

The specificity relating to scientific cognition is twofold: much depends on whether the accent falls on the given content or incipient procedure. Within the context of a science the objects serving as initial data are particular and the primary approach to them is by way of perception. The term specific may thus be used to designate either the original data of scientific subject matter or the inchoate phase of the scientific method, observation being the word that covers the first step in inquiry as well as the first exposure or *mise en scène* of the explorable material. This is implied in the elliptical expression "observational data"—for nothing is given specifically unless given to be observed and the primary evidence of the given lies nowhere but in a specific act of observation.

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2 The distinction between subject matter and the data exemplifying it, dwelt upon in the preceding chapter, must be borne in mind. *Data* of philosophic subject matter are not strictly determinate and thus free; the *subject matter,* however, has determinateness but of the non-specific kind.

Now specificity epitomized under observation, whether taken as meaning the objects or the processes thereof, is a form of determinateness ineradicable from scientific inquiry, representing, so to speak, the very pivot of its enterprise. Non-specific—that is, non-observational—determinateness which science attains, whether generic or conceptual or causal or mathematical or any other, presupposes as condition *sine qua non* specific or observational determinateness; and not only is such determinateness basal, since observation is the ground of scientific cognition, it is also summital, observational data being data to which scientific inquiry must have recourse for confirming or invalidating entertainable hypotheses or theories.

For this there is no parallel in philosophy. Of philosophic subject matter we may categorically assert that it lacks specificity without being indeterminate. This simply means that philosophic inquiry requires neither at its base nor summit reference to observational data such that constitute the indispensable essentials of scientific inquiry. And this emphasizes again the distinctly generic nature of philosophic discourse the cognitive dimension of which differs from scientific *toto caelo.*

If determinateness is generic as well as specific, the autonomy of philosophic inquiry becomes in principle fully justified. Generalities free from observational data transcend of necessity the generalities amenable to the scientific method. The cognitive value ascribable to meta-scientific capacious concepts ultimately hinges on the use of procedures not strictly under observational direction or control.

General concepts of philosophy, though exceeding in range those of science, themselves exhibit varying degrees of extensibility in accordance with the nature of their contents. Indeed, any philosophic topic has but the generic scope which interest or point of view may determine. The limits of applicability pertaining to philosophic generalities are singularly elastic.

Consider again the notion of scientific unity. What particular disciplines should it include? Is it susceptible of shifting determinateness? And does difference in synoptic comprehension

militate against the cognitive claims of generic theories of science?

Upon these questions we cannot enlarge here in detail. We need only reiterate that generalizations concerning the unity of science, unlike scientific generalizations relative to specific contents, are in origin and validity independent of observational data. Theories *about* science are radically different from theories propounded *by* science. Yet there is here no contrast of opposites: scientific knowledge about specific matters remains as such unaffected as a result of the knowledge sought by meta-scientific inquiry regarding the extent and limits of science.

The theme mentioned throws additional light on the determinate dimension of philosophic knowledge. It is a generic dimension with extensible boundaries. Synoptic latitude of subject matter varies from philosophy to philosophy. Of this, avoidless generification of the sciences is precisely a case in point.

For what such generification is to comprise depends in the first place on definition of the generifiable subject matter. Science is definable in various ways; the breadth or narrowness of the definition will be influenced by the particular sciences considered representative. Obviously, the generic unity of science will wax or wane in accordance with the selection of the exemplary disciplines. Is the selection completely arbitrary? Hardly. "What have the sciences in common in virtue of which they constitute a single cognitive group?" "Does or does not the name of science belong to a given discipline?" These are questions not to be settled by fiat. They appeal for their answer to certain criteria which differ in correspondence with the difference of philosophic positions.

Are the natural sciences the only model sciences? And are some, such as physics and chemistry, singularly preëminent? Are the disciplines subsumed under biology but sciences by courtesy? And in calling itself a science, does, for example, psychology (or anthropology or sociology) usurp a name to which it has no legitimate title? Where exactly is the line separating genuine science from quasi-science or pseudo-science? Such questions are only too familiar, inviting historical as well as linguistic con-

siderations. But the strictly philosophic issues they suggest have an intrinsic importance. The generic meaning of any interest or activity (for instance, of religion or art) constitutes a distinctly theoretical problem in the interpretation of which genetic or semantic modes of approach must be regarded as ancillary rather than prerogative. Generalizations about large areas of human concern ultimately reflect the philosophic persuasions by which they are guided or controlled. And so with generalizations about science. They will vary in accordance with the particular sciences elected for their paradigmatic value. But no list of sciences made up of the "elect" can be justified for purposes of generification save on grounds methodological or ontological.

Assuming the unity of science to be a unity of method, little astuteness is needed to note that different philosophies may construe such unity in different ways, the fundamental issue being whether one mode of scientific procedure enjoys supremacy over another. The scientific method is admittedly complex, of various devices all compact, some on occasion more relevant than others, depending on the nature of the subject matter. But if the generic meaning of science is to be defined by procedure rather than content, reference to the latter becomes gratuitous, and the problem is this: Since the method of science can be discerned to involve sundry procedures, are they intrinsically on a par or is there between them a disparity in cognitive rank or use? And philosophers are ultimately divided over the question of priority relating to the procedural operations characteristic of scientific methodology.

An illustration or two will serve to point up the issue.

Everyone knows that experiment and mathematics play major roles in scientific knowledge, and many a science must have recourse to both for purposes of validating its statements. Yet no student of the sciences can ignore or blur the distinction between those predominantly experimental and those leaning heavily on mathematics. Experimental and mathematical operations are not equally requisite for all cognitive inquiry. This is merely another

way of saying that no scientific technique can be actually divorced from its objects of application. *If,* however, regardless of subject matter or in abstraction from it, the label "scientific" is to be affixed to method alone, the relation of the two kinds of operation becomes of paramount importance. Are experimental and mathematical operations mutually exclusive or are they mutually assimilable? If the former, *the* scientific procedure, scientific procedure *par excellence,* would have to be interpreted as being *either* the one *or* the other; if the latter, mathematical technique would have to be viewed as convertible into a species of experimental, and *vice versa.*

In tentatively opposing experimental and mathematical operations or in subordinating each to each, I wish to call attention to the possibility of using separate philosophic idioms for expressing the generic unity of science from the standpoint of methodology. The idioms in question are those employed by the doctrines, whether ancient or modern, usually designated as empiricism and rationalism. The verbal felicity of the designation is due to the fact that "experience" and "reason" are comprehensive and pregnant terms under which two sources or organs of knowledge may be readily epitomized. There will always be variants of empiricism and rationalism so long as these summary terms denote or connote different levels or functions of the mind, and so long as either may be selected in which to anchor human knowledge. The relation of these putative grounds of cognition is of the alterative kind. In extreme versions of empiricism and rationalism the relation appears as disjunctive, pure reason and pure experience remaining unassimilable. In versions less radical or more attenuated, reason and experience lose their "purity" and cease to be stark opposites, each, in fact, becoming absorbed in the other as the specific in the generic. But which is here genus and which species? This is a point perennially at issue. Many attempts have been made to include within an expanded notion of experience all the acts and products of thought, nor have efforts been wanting to embrace within a liberal conception of reason all the states and utterances of mind. The story of the

endeavor to subsume under each other reason and experience is old and familiar. I should only run the risk of appearing invidious by citing examples at random.

Experience and reason, though their *dualism* may theoretically be circumvented or transcended, can actually never lose the *duality* apposite to them, there being no alchemy for bringing about their complete transmutation. Even the view that they are somehow parts or aspects of one another must leave as indefeasible their dyadic status, resting as it does upon an antecedently logical demarcation between the generic and the specific. To characterize *all* experience as rational or *all* thought as empirical is to deprive either predicate of its significant correlative and thus of its meaning: the qualifying function of the preferred predicate becomes null and void if taken as non-contrastive. One way of annulling a term's import is to remove significance from its opposite. The dictum might be hazarded and one worth pondering that surrender of any dualism cannot abolish the duality held to form its basis.

The bearing of this on the distinction between experimental and mathematical procedures, upon which scientific knowledge is said to depend, is quite obvious. By no stretch of logical latitude can the two kinds of procedure be made to coalesce: their dualism may be renounced but not their duality. We may perhaps succeed in partially assimilating experiment and mathematics but we can never establish their equivalence without talking nonsense.

Suppose we enlarge the concept of experiment and comprehend under it mathematical operations such as go in German under the name of *Gedankenexperimente.* Are mathematical experiments, if we choose so to call them, the same as laboratory experiments? The duality of physical and intellectual operations, much as each kind may involve or be involved in the other, remains irreducible. Unrestricted or unqualified application of either adjective would only result in absurdly dispossessing it of an undeniable correlative. Let any class of operations be considered as ever so universal. Yet the operations we think of as mathematical, though included in this all-inclusive class, must necessarily

form a distinct sub-class, and the correlative term non-mathematical would have to be affixed to all the other operations constituting sub-classes of their own.

The same contention applies of course if the assimilation be reversed and, instead of subsuming mathematics under the generalized notion of experiment, experiment becomes included within a catholic conception of mathematics, on the assumption that all experimental operations involve some reference implicit or covert to number and measure. It is difficult to see what in such a view the term mathematics could fruitfully signify. Stripped of a correlative, it would be attachable to nothing determinate. If the class of mathematical operations were to be extended to cover operations not strictly mathematical, such for example as those carried on under laboratory conditions, would it not be necessary to distinguish sub-classes *formally* mathematical from sub-classes not describable as such in the same differential sense? In short, if all operations were unqualifiedly mathematical none could be characteristically mathematical.

I should have refrained from underlining the obvious if the fallacy of endowing some term with exclusive significance in oblivion of the significance possessed by its contrary or contradictory were not so common or so insidious. All this, however, though in part digression, is relevant to our present theme.

If the unity of science is to be construed as one of method, how attribute to scientific methodology, which is so multiplex, a nature unequivocally generic? Especially pertinent is the distinction between experiment and mathematics. To which of these major poles of procedure should priority be assigned? For sciences differ in their technical devices. Admitting as true that a modicum of experiment and mathematics is universal and necessary, an admission contradicted by the existence of certain disciplines that seem to require neither, the fact remains that there are sciences with but a shaky experimental foundation just as there are sciences in which reliance on mathematical thought is more or less negligible. For the purpose of methodological generification of the sciences it is thus of central importance to decide which of the two kinds

of discipline be adjudged typical or representative, those basically experimental or those in intimate alliance with mathematics.

The methodological bifurcation noted clearly and strikingly exemplifies the inexpungible duality of experience and reason, no matter which be considered the species of which, experiment being a mode of inquiry designedly empirical and mathematics the very model of rational activity. Choice of sciences closely bound each to each by methodological affinity will accordingly depend on the philosophic position requiring it. The choice made by empiricism will thus radically differ from the choice made by rationalism. Various philosophies of science are possible, and each, in being *a* philosophy, will inevitably reflect the point of view and the conceptual framework and the idiomatic language to which it owes its distinctive character. There can be no generification of science, therefore, except in terms of a particular philosophic position. And when a philosophic position, such as the Baconian or Cartesian, comes to be linked with the genesis of an original doctrine of method, it is hardly surprising that the new method should dominate the conception of science. But to conceive of it as according with the postulates of empiricism or with those of rationalism is to conceive of science as not genuine save in the favored few disciplines exemplary of the doctrinary method. Whatever be the relation of a philosophic discourse on method and the method called "scientific," and however each be regarded as adaptable to the other, the generic notion of scientific procedure is a notion preëminently meta-scientific expressible in different dictions. Passing allusion to Bacon and Descartes suffices to show how formidable is the duality of experience and reason, and how successfully either may be chosen to serve as ground of a distinct organon. Indeed, this dyad, the basis of one form or another of alternative organa, runs through the entire course of Western philosophy from Plato to Dewey.

The conception of methodology without ontology is a sort of *tour de force* hardly capable of being convincingly sustained. The attribution to science of a generic unity in terms of one organon

or another would be altogether anomalous if the attribution were not implicitly grounded in some ontological position. Concealed, and often quite thinly, is a theory of being in every theory of method. For in abstraction from all subject matter the question of supremacy concerning any mode of procedure becomes rather pointless. Method is not usually worshipped for its own sake though methodolatry is not uncommon in philosophy and elsewhere.

In actual investigative practice such as the sciences exemplify the question of procedural supremacy appears to be neither important nor relevant. The sciences accomplish their several tasks by the use of all available means. Their achievements represent a synthesis of observation and inference, experiment and theory, intuition and analysis, induction and deduction. The sciences succeed in producing their cognitive results without raising the issue, so central in many a doctrine of method, whether such results depend on exclusive fidelity to a single procedural standard. Whether supremacy should be accorded to one device or another is a problem with which philosophers rather than men of science are chiefly preoccupied. And when philosophers become zealous champions of a certain procedure, whether intuitive or analytic, semantic or pragmatic, mathematical or dialectical, their methodology is apt to turn into methodolatry. Worship of a uniform method is of course precluded by the diversified nature of scientific subject matter: men of science are as a rule not disposed to endow with primacy a single investigative process, impugning the validity of any other or subordinating it to the process selected as prerogative.

Because of the different practices necessitated by heterogeneous fields of study, it would seem futile to define scientific cognition by method alone as if there were but one science or one procedure. The scientific method covers diverse devices for attaining and advancing knowledge, and knowledge, be it remembered, not about knowledge but about things. The objects forming the contents of science, to the knowledge of which method is ancillary, can hardly be left out of consideration: a definition of science in the singular or as generic, if not objectively justified—justified,

that is, with reference to its objects—remains but nominal in a loose or crude sense.

A real definition must embrace within the generic unity of science topical as well as procedural multiplicity. But method is subservient to subject matter. Accordingly, no definition of science can be materially probative unless couched in terms of its generic ontology. How is that possible? How *can* the sciences be conceived as sharing an affinitive subject matter, seeing that each preëmpts for special treatment a special content often not even tangential to the content of any other? Here precisely lies the *crux criticorum.* Either a generic ontology of science is a conception void of significance to be eschewed, its rejection entailing abandonment of any search for scientific unity; or else a real definition of science, tantamount to a definition of the generically real, must be assumed as somehow discernible in the varieties of scientific subject matter.

Exploration of the generically real is a task philosophy has ever been intent upon. And for such exploration the sciences afford a fertile soil: more than one ontology may be derived from them. All depends on the elective affinities, so to speak, between certain philosophic positions and some of the sciences.

The possible division of the sciences into experimental and mathematical may now be seen to represent more than a bifurcation in procedure. Neither the experimental nor the mathematical method is universally applicable: if there are sciences in which one or the other predominates, the explanation must be sought in the nature of their subject matter. All modes of inquiry are not equally suited to all topics of inquiry. The procedure of a discipline, be it ever so apposite to its own content, may prove inept or useless in relation to another. This would seem to hold generally.

If nevertheless a certain methodology is endowed with supremacy, it is not because of an idolatrous veneration therefor, a practice not altogether unusual, but largely because of its greater fitness for a subject matter held on prior grounds to be pre-

eminently real. The methods extolled, for example, by empiricists and rationalists signally comport with the theories of being on which they are alleged to be founded. The allegation is dubious: contrasted doctrines concerning the ways of things cannot always be made to follow ineluctably from contrasted ways of knowing. Be that as it may, however, in empiricism and rationalism—in some of their variants, at any rate—prior ontological persuasions appear to govern the choice of their respective methods. It would be difficult to reverse the order of priority.

Are there or are there not necessary connections between events? Is the flux of appearances absolute or is their flux relative to a substantial reality behind them? Are particular existents ultimate or are they instances of prior universals? Random though these questions are, they sufficiently indicate some of the issues that divide empiricists from their traditional rivals. As regards these issues, at all events, empiricists have tended to deny what rationalists affirm and to affirm what they deny. In such denials as well as affirmations the champions of experience have strenuously opposed one doctrine of being in favor of another. For nothing but an ontological persuasion can prompt them to maintain that the nature of things is contingent and fugacious and particular, thus repudiating the validity of competing categories. And if in support of their contentions they argue that by the empirical method no other conclusion appears tenable, the argument has indeed an incontrovertible cogency: the method adopted simply reflects the presupposed ontology to which it is adapted. But another method, another conclusion. The rationalists, guided by a different ontology, obviously need for its confirmation an altogether different procedure. In short, what except antecedent fidelity to an ontological position can render necessary exclusive reliance on either "experience" or "reason" as source or vehicle of true knowledge?[3]

No wonder then that the mathematical sciences are paradigmatic for rationalism and the experimental for empiricism: their harmony

[3] This paragraph, considerably altered, is reproduced from the writer's "What is Empirical?" *The Journal of Philosophy,* Vol. XXXVI, No. 11, pp. 281-289.

with the ontological positions involved appears as if preëstablished. Consequently, a real definition of science, hinging on what may be discerned as generic in scientific subject matter, can have no equal or impartial reference to all species: philosophers do not seek in the same sciences support for their differing theories of being. But how are divergent types of science comprehensible within an inclusive ontology? How in particular may experimental sciences find accommodation in rationalism and mathematical in empiricism? This is a major problem soluble only, it would seem, by the process of reduction or assimilation. Which of the two kinds of science is to be absorbed in which?

Of theories of being there is no dearth. What in the varieties of scientific subject matter is generically real may be made to accord with the varieties of philosophic persuasion, some independent of rationalism and empiricism and some but tangential to them. Generifications of science consonant with such positions as mechanism or vitalism, physicalism or phenomenalism, naturalism or idealism, presuppose free selection of compliant disciplines—and here, too, the recalcitrant ones present a serious difficulty inviting solution by assimilation or reduction, or solution in any way by which they could be fitted into a single all-embracing generic scheme.

It would be nonsense of course to speak of a genus of science not derivable from and in turn applicable to its autonomous species—autonomous, that is, within domains of specialization that *prima facie* are more or less heterogeneous. The game of their reduction or assimilation for the purpose of overcoming apparent heterogeneity of subject matter may be played for the benefit of any favored species. The sciences themselves, intent upon their own labor of specialization, do not raise or cannot settle the issue regarding their ontological preponderance over one another. This is an issue distinctly meta-scientific which no philosophy is debarred from interpreting in terms of its own basic position. The contents of no science can be declared ineligible to serve as standard for judging the generic traits of the contents pertaining to every other. In the last analysis, a gen-

erification of science would appear impossible without attribution of ontological preëminence to some of its species, the attribution being entirely deliberate, an exercise of constructive thought.

The discussion of the unity of science need not be carried further. It may be useful, however, to recapitulate the salient points in connection with this illustrative theme.

(a) To speak of the unity of science is to employ a synoptic notion transcending in range the unity aimed at by every separate science. Strange to say, the very specialized treatment by a science of its own specialty entails synoptic generalization. So long as the task of cognition demands that it comprehend under certain concepts or laws, hypotheses or theories, the totality of phenomena falling within its field, no science can renounce its claim to relative universality. For it is in virtue of relative universality—relative to a particular area of inquiry—that science grows into a "body" of knowledge, the metaphor suggesting an articulated concatenation of utterances concerning a given subject matter so far explored. In other words, what a science "embodies" is a synthesis of generalizations pertaining to a specifiable congeries of "facts." The unity of science, considered distributively, is thus simply the unity within each and every science, the need for cognitive synopsis or synoptic cognition of things seen piecemeal being ineluctable. In a collective view, however, the unity of science has for its scope the totality of the sciences. It is a unity not intra-scientific but inter-scientific. And it is literally meta-scientific, for the generic nature of science lies beyond the reach of scientific investigation both in matter and manner, in the one because it lacks specificity and in the other because it has no roots in observation.

(b) The unity of science as theme of inquiry—a theme determinate without being specific or conceptual but non-observational—belongs to a domain of cognition distinct from science in illimitable synopsis. The dimension in breadth, synoptic extensibility amenable to no preconditioned restriction, is what the term meta-scientific is designed to connote. The generic or the general

in which philosophy specializes, so to speak, is determined by data not similar to those required for science. For what in the present context is said to be given consists of the existent sciences in all their plurality and variety. The data exemplified by the separate sciences generate multiplex issues, chief of which having to do with their order and connection, integration of the sciences in terms of their congeneric traits being a distinctly philosophic goal. Indeed, the objective of philosophic cognition, whatever be the explorable object, always lies in the direction of maximum generality, and in this must be sought its dimensional distinction from the objective of scientific cognition, the latter aiming at such generality only as the perceived and perceivable data may permit and support.

(c) Synthetic construction in which philosophy excels presupposes material essential for such construction. The unity of science —our chosen theme—signifies nothing else than unification of cognitive disciplines antecedently flourishing in their separateness and isolation. No genus without pre-existing species, the exception being species considered *sui generis,* an exception manifestly inapplicable to the sciences without viewing their multiplicity as a multiplicity of incommensurable genera, in which case any congeneric name affixed to them would be an obvious misnomer even on the basis of a crass nominalism. Apart from their historical genesis which shows the sciences to have developed from a common matrix, they are demonstrably open to comparison from different points of view. While it is true, therefore, that generic construction of science is a product of philosophic thought, the particular sciences needed for the construction actually function in independence of it; as autonomous disciplines, they appear to be indifferent to any methodological or ontological affinities imputable to them.

Clearly, sundry sciences must be in effective operation before there can emerge a supervening philosophy concerned with the interpretation of their cognate natures and mutual relations. Requisite for generic concepts is always the given generifiable material the concepts are designed to comprehend. Incidentally,

any conceived genus, be it the genus of art or religion or society, must have reference to pre-real determinate species, unless philosophy claim exemption from the universal maxim *ex nihilo nihil.*

(d) Yet philosophic constructions of genera out of pre-real species are free constructions: the constitutive species are deliberately selected in accordance with the requirements of ontological persuasions. Here again reference to the unity of science is pertinent.

Scientific knowledge is of course nothing if not knowledge attainable through a certain procedure about a given subject matter. The notion of knowledge *by* a method without being knowledge *of* anything is palpably absurd.[4] Actually, objects of cognition, though often disregarded, are always implied when discussion is focused on the distinctions and relations of the different ways of knowing.

Nevertheless, the diverse cognitive procedures considered in abstraction—that is, without explicit reference to their contents—could indeed be thought of as if comprisable under the wholesale label of "scientific method," and the generic unity of science could thus be made to coincide with a uniform methodology. But how establish the generic meaning of science in terms of methodology alone, seeing that in actual practice procedures vary from science to science, and vary precisely in conformity with the difference in subject matter? What mode of inquiry, barring the observational if we assume as unexceptionable its general use, can qualify as typical or representative? Here the choice is so wide that the scientific method in its generic sense tends to be equated with procedures operative predominantly in some sciences but not in others, the procedures favored serving as cognitive exemplars, and serving thus because of their harmony with the methodology awarded paramountcy by a particular philosophy.

As pointed out, however, the supremacy attributed to a pre-

[4] As Frederic J. E. Woodbridge remarks: "Trying to find criteria for knowledge irrespective of what it is knowledge of, appears to me ridiculous. It is trying to identify knowledge without anything to know." *An Essay on Nature,* Columbia University Press, 1940, p. 10.

ferred procedure, whether the experimental or mathematical or any other, is inextricably bound up with the supremacy of the subject matter to which the procedure is peculiarly adapted. And nothing except a distinct theory of being can assign to any scientific subject matter a prerogative status. Therefore, since modes of inquiry are relative to their objects of application, the interpretation of scientific unity as one purely procedural becomes patently untenable. The unity of scientific methodology enjoys plausibility simply because it is implicitly grounded in a meta-scientific ontology.

(e) Philosophic constructions of genera based upon free choice of exemplary species show that concerning the same topics competitive interpretations are ever possible. Presupposed in the rival theories of science are the separate sciences functioning separately. *They* are the given objects the theories are about, undergoing as such no change in consequence of the conflicting interpretations to which they equally lend themselves: nothing happens to the actual operations of the sciences but only to the synoptic cognitions of them. These cognitions, of which the sciences need take no cognizance in the pursuit of their special aims, appear in sundry forms, depending on the data chosen, the methods used, the concepts preferred, the idioms adopted. A philosophy of science has its sole anchor in such data as comparison of the ongoing sciences might be induced to yield; since, however, the sciences are various and their comparisons variable, choice of comparative data for a philosophy of science can never be compulsory, the choice being made principally to conform to a prior basic ontology. And as long as choice of such comparative data remains optional, one philosophy of science must inevitably differ from another—in point of view and development, in scope and terminology. Latitude in selecting the data of its subject matter, which, unlike science, philosophy may justly claim, has its rationale in the irreducible plurality of ontological positions. Such plurality is a stubborn fact historically recorded for all to read. It is also a logical problem crucial for the meaning of truth. Does the plurality of ontological persuasions, a plurality which none can deny, justify a pluralistic

ontology reflecting a pluralistic universe? To this question we shall revert in the sequel.

I have dwelt at length on the concept of unity in relation to the sciences merely for the purpose of clarifying the cognitive dimension of philosophic thought. Consideration of other synoptic concepts applicable to the sciences would likewise exhibit its characteristic dimension.

Generic continuity, for instance, if attributed to the sciences in the face of their apparent discreteness, illustrates the same thesis.

Continuity, too, is a formal category of varied applicability, functioning distributively in some contexts and collectively in others. It is obvious that continuity *within* the sciences differs from continuity *between* them. Indeed, if the sciences in their actual operations did not comport themselves as if they were discrete, the question of their putative continuity would be rather pointless. As observed earlier, the distinction in the use of a synoptic category is, so to speak, adjectival: restricted as an instrument of thought in scientific contexts, in meta-scientific it appears illimitable. Continuity, being a category of flexible extensibility, may be stretched beyond the bounds permissible in science.

What is true of continuity holds of other synoptic concepts: they vary in breadth of application. And because they vary thus, we may distinguish by means of them dimensions of cognitive discourse, the meta-scientific dimension contrasting with the scientific in application of conspective categories on the widest possible scale.

But comprehensiveness on any scale must be determinate—that is, relevant to some given subject matter. "Comprehensive of what?" is a question we may always ask concerning any synoptic idea. A philosophic universe of discourse might well embrace the universe of things provided that data could be found, however optional the choice of them, exemplary of such an all-inclusive field. It is scarce necessary to allude to the recurrent endeavors of traditional philosophers to carry synopsis to the uttermost

limits. Conceptions of the universal traits of being, modern "dysontologists" to the contrary notwithstanding, are not without meaning; far-flung theories of reality have continued to be propounded on the basis of various data drawn from various sources, drawn not only from the strictly cognitive spheres of science but from other realms of human interest as well, such as the realms of art and religion and morality. The incompatibility between them is not surprising: the profusion of data inviting selection is too great. Not dearth but wealth of material is what any ontology has to contend with: the *embarrassment* of choices is truly embarrassing. If the unity of science, and *a fortiori* the unity of nature it reflects, can be so incongruously interpreted, it is far from strange for systems of thought to be ever in conflict, the appeal made being to data freely eligible from the boundless plenitude of human experience.

What is remarkable is not that there should be disparity but rather agreement among the votaries of philosophy: well-defined types of ontology do recur and persist, and within a "school," at any rate, just as within a religious sect, there is no want of concord. But the divergent types themselves can neither annul nor assimilate one another, not only because the unequal data may possess equal authenticity and relevance but chiefly because the same data, assuming concurrence regarding their identity, lend themselves to conflicting interpretations consonant with the dissimilar positions guiding the interpretations. And this touches the nerve of the difficulty inherent in the cognitive claims of philosophy.

Philosophic claims to knowledge, whatever the subject matter, must needs be at variance if they involve (a) dissimilar data chosen to represent the subject matter or (b) similar data differently interpreted. This is scarcely odd when the subject matter is of the sort with which ontological studies are occupied. Ontological issues are open to multiplex treatment. What is the material constitutive of the content pertaining to a theory of being? From what areas of human experience or interest are the requisite data procurable? Do some rather than other areas furnish data more adequate or more characteristic? And what is the criterion for

their choice and preference? Such and kindred questions suggest how great may be the gulf between opposing kinds of ontology. Invading each other's territory, they may interpret in antithetical ways the same subject matter based either on incommensurable data or on comparable data approached from irreconcilable points of view.

Let it not be said, however, that it is the immensity of the territory that accounts for this apparent anomaly, as if by eschewing ontology philosophy could avoid the conflict of synoptic conceptions. Mutual annexation of subject matter, resulting in defining or exemplifying it by means of preferential data, is this not typical of any philosophic discipline? The field of ethics, for example, is certainly more circumscribed than the field of ontology, yet within that territory the synoptic views entertained are universal in scope. But it is a territory not occupied exclusively by a single theory; competing theories have equal reference and equal claims to it. Ethical theories, divergent though they be, are theories about the same subject matter, but the data selected as representative of the subject matter constitute one line of cleavage between them: the data chosen reveal themselves either as intrinsically dissimilar or if similar as not similarly interpretable. Such indeed is the "normal" condition, as it were, in every branch of philosophy: a subject matter agreed upon as enjoying definable determinateness becomes the content of rival theories, each synoptic in or on its own terms, and each prone to charge the others with mis-choosing or mis-judging the exemplary data.

For this state of affairs there is no exact equivalent in the sciences: they are divided principally by subject matter, none invading or annexing the subject matter of the others; they are thus non-competitive, each intent upon its specialty without meddling with the rest. And while *within* each science, at some stage of inquiry and concerning some crucial facts, alternative hypotheses are possible, compulsory data—that is, data compelling general acquiescence in them in consequence of further and more controlled observation and experiment—tend as a rule to tip the balance in favor of one hypothesis rather than another.

Since the sciences operate as separate and autonomous disciplines, they must first of all be considered in their plurality and discreteness, for only as such do they exemplify a dimension of thought in which generalization presupposes specifically determinate material and in which the range of synopsis is strictly limited. It is when we envisage the sciences in their unity and continuity, as on reflection we must, that we pass to another and different dimension. For in any inquiry pursued by a philosophic discipline the consummate interest lies in the primarily generic aspect of the subject, its ultimate goal being a synoptic interpretation of the same free from predetermined restriction.

Like science, however, philosophy appears in diverse and disturbingly discontinuous forms. It too, therefore, is in need of unification unless philosophy be but a name under which conveniently to subsume miscellaneous fruits of speculative discourse. Is philosophy susceptible of definition not merely nominal? Has philosophic thought itself a generic nature? If so, how discover and justify such a nature?

Chapter IX

GENERIC IMPORT OF PHILOSOPHIC THOUGHT, I

Between the problem of scientific and that of philosophic unity the difference is fundamental. Stated succinctly, it is this: the unity of science constitutes a problem transcending science, whereas the unity of philosophy is a problem immanent within the philosopher's universe of discourse.

The question concerning the unity of science can form no part of the subject matter of any science nor can the question be dealt with by its special modes of procedure.[1] The unity of philosophy, however, if it becomes an issue, is such philosophy alone can cope with. Philosophy of philosophy, unlike science of science, is more than a figure of speech or *jeu d'esprit.* In short, theoretical unification of science is a task literally extra-scientific, unification of philosophy, being as it were self-unification, must come from intra-philosophic activity. The distinction thus drawn throws some light on the peculiar status of philosophic cognition. It is, as we shall see, not without far-reaching implications.

When philosophy is intent upon unifying the sciences by extracting from them congenerous aspects relating to comparable procedures or assimilable contents, the ensuing result is a synoptic view of scientific cognition, in default of which scientific cognition would remain dispersed among independent domains of inquiry.

[1] To speak of "science of science" is to carry linguistic licence beyond permissible limits. A science having science for its *object* is a strange science indeed! And in being exempt from the scientific method—in being free, for example, of the necessity for observational and experimental data—science as *subject* acquires a unique status, indistinguishable from the meta-scientific discipline usually identified with philosophy, and by that name to avoid confusion it had better be called.

It requires little astuteness to note that the sharp differentiation of the sciences must inevitably lead to mutual isolation if not estrangement. The votary of a particular discipline is often but a tyro even in a field closely contiguous to his own, and the remoter the field, the greater his sense of exclusion from it. A physicist and biologist, for example, though occasionally conversing about their different researches, cannot suppose that each is sufficiently conversant with the other's specialty; indeed, each not seldom looks upon the other as mere layman with respect to the details of his subject. Yet, physicists and biologists, who are masters only within separate spheres of specialization, invariably regard themselves as copartners in the enterprise of science.

The notion of cognitive co-partnership entertained by men widely parted by barriers of specialization can receive no justification from those able to speak with authority solely for the specific disciplines in which they happen to be proficient. What, to use another illustration, entitles astronomer and bacteriologist to assume the role of spokesmen for science as a whole? Discovery of Science in the sciences, discernment of generic traits pertaining to their differing topics or techniques, calls for expertness not automatically vested in specialists whose jurisdiction does not extend beyond the limits of their own territories. The very fragmentation of scientific knowledge renders necessary its meta-scientific integration. But for the cognitive function exercised by philosophy, the function of bringing together under some common denominator disciplines so diversified and divided, each would perforce appear as unique, virtually *sui generis,* altogether without affinity to any other. The quest for the generic meaning of science, pointing indeed in various directions, is inescapable—and inescapably philosophic.

Reserved likewise for philosophic justification is a related notion implicit in the sciences; the notion that the cosmic nature to which the sciences severally address themselves is somehow single and continuous. From the standpoint of any particular science this is of course inexplicable. No science, restricted as it is to a particular and discrete domain of inquiry, knows anything of na-

ture's unity or continuity. It is precisely because of the division of the sciences by subject matter, their respective fields representing differentiated areas of nature, that the problem regarding their order and connection becomes so crucial.

That the partition of nature by the sciences presupposes a unitary realm of being, parcelled out, as it were, for purposes of inquiry, may or may not be defensible. Yet, the singleness of nature does appear to be the tacit though odd assumption of all the sciences, odd because no science can vouch for it, since every science can only concern itself with a given segment of nature, and given in the first instance as if unrelated to any other. Is a holistic conception of nature founded on myth or fact? The sciences themselves, functioning in plural and discrete ways, can do no more than precipitate the issue. And the issue is fundamental. Has the division of nature upon which scientific knowledge depends any theoretical foundation at all? Is the division but a practical device for allocating the labor of scientific inquiry? Clearly, were science taken in a distributive sense alone, doubt if not denial of nature's integrity would seem inevitable. Only a collective view of science could be made to serve as basis for the belief in the unity of nature. Science as a whole reflects nature as a whole. But the wholeness of science is not a scientific but a meta-scientific notion.

Thus cognitively important is a meta-scientific synopsis of the sciences and *a fortiori* of their several contents. Not only important but ineluctable. For in the absence of such synopsis we would be left (adapting Kant's familiar expression) with a *Gewühl der Wissenschaften,* an abundance of disciplines each in pursuit of ends in quasi-independence of the rest. And the deliverances of scientific cognition, scattered among heterogeneous specialties, though not resisting the special generalizations arrived at separately by the separate sciences, must likewise remain, unless viewed in holistic fashion, without mutual bonds of connection. In short, science as well as nature can have no generic traits save those exhibited by the synoptic activity of philosophy.

To be sure, these traits will not be the same for every philosophy.

There is freedom, as noted earlier, in the choice of data requisite for a synoptic interpretation of science; because of such freedom rival theories are possible concerning the generic master trait of scientific methodology or scientific ontology. But any philosophy of science, it matters not how different from or conflicting with any other, performs the necessary function of unifying in some comprehensive manner the many autonomous fields of inquiry. The *need* for generic conceptions of science constitutes no issue, the issue ultimately being *choice* among them. We simply cannot dispense with a philosophy of science: without it, we should have nothing but separate cognitions, separate in their ways and separate in their objects. To eschew a synoptic theory is to reduce science to segregationism as to content and procedure. If the generic is to be found or revealed in the specific, a philosophy of science is ineradicable, optional though the choice may turn out to be for any particular version of it.

The need for a philosophy of science is thus imperative and the possible construction of conflicting variants is not an issue affecting the need. Preference of one variant over another is something each philosophy manages to settle in terms of its own basic position. For it is such position that determines selection of data for the attempted generification of science as well as the method and idiom of its articulation. Generifications will thus vary with the positions on which they are made to depend. From diverging positions, such as empiricism and rationalism or physicalism and phenomenalism, science will not be envisaged as possessing identical generic traits. Competitive notions of such traits are but reconcilable from the perspective of each through the familiar device of reduction or assimilation. Meanwhile, the sciences continue to labor in their several fields, producing by separate means the variety of cognitive ends, equally indifferent but also equally tractable to every meta-scientific generification of them.

The dialectic of genus and species is inherent in the principle of specialization by which in their actual operation the sciences

must be governed. So long as this principle is in force—and it cannot be weakened without destroying the autonomy of any inquiry relative to its theme and procedure—the sciences present an anomaly, not indeed to themselves, but only to philosophy bent upon their synopsis. There is of course nothing anomalous in a discipline cultivating its own garden; a science would cease to be the science it is, as astronomy would cease to be astronomy, if it could exchange its subject matter and method for the subject matter and method of another science. And in attending to its cognitive field a science is not called upon to pronounce judgment on its generic affinity with any and every other field. No science, in short, is explicitly involved in the dialectic of genus and species.

The anomaly in question makes its full appearance in a meta-scientific conspectus of scientific cognition. Such conspectus is required to see continuity in the discrete, unity in the diverse, integrity in the separate. Plainly, a generification of science represents a union of opposites—without the category of the special, no differentiation, and without the category of the universal, no unification. The transition from the plural to the singular use of science hinges on a dimensional change in categorial expression.

It goes without saying that the derivation of Science from the sciences is not a reduction of the species to the genus: the specialties presupposed for generification do not forfeit their original status. Yet from the same antecedent species a different genus is always derivable in accordance with the philosophy undertaking the derivation.

The anomaly noted, confined to the relation of a putative genus of science to its actual species, the character of the genus varying with the philosophy exhibiting it, cannot be avoided except by replacing it with one no less formidable.

What anomaly could be more curious than to assert the uniqueness of each and every science? This would obviously render abortive the attempt to use science in the singular in any pregnant sense. The principle of specialization taken strictly seems to prohibit the ascription of any unity to disciplines so separate. The only trait the sciences could thus be said to have in common

would be the trait of being equally special and equally unique. A thesis like this, purely supposititious, should not be rejected offhand any more than should a Leibnizian monadology to which it may be playfully accommodated. Indeed, a monadistic view of the sciences is not altogether fanciful: each science does enjoy complete autonomy over its subject matter, pursuing a cognitive aim as if inhabiting a self-enclosed domain of inquiry. If the sciences appear to exhibit a family resemblance, whether in content or procedure, does the explanation perchance lie in some preëstablished harmony? The analogy suggested can of course not be pressed: the sciences do not actually comport themselves as solitary units. Specialism and separatism, varying in degree, do not apply to them in equal measure, some being more and some less independent of the others. Yet a pluralistic conception of the sciences in quasi-monadistic terms attenuates somewhat the extravagance that would otherwise cling to it, the allusion to Leibniz lending to the conception a modicum of speculative respectability. A radical pluralism of the sciences is notwithstanding paradoxical.

Undeniable indeed is the plurality and variety of scientific specialties but undeniable too is the fact of their being comparable and thus unifiable.

No dialectic confronts any science with respect to the interplay of the specific and the generic: within its proper sphere, as remarked earlier, the two are correlative and interdependent. Every discipline, be it ever so specialized, abounds in generalities. Synoptic concepts relative to its proper contents are ineradicable. It would be a strange science that could not regard particulars as instances of the universal and the universal as embodied in particulars.

Nor are the sciences dialectically implicated when made to exemplify a generic methodology or a generic ontology. In their capacity as individual disciplines, the sciences are, so to speak, neutral *vis-à-vis* supervening interpretations of them: none is favored and none repulsed.

The anomaly can thus not inhere in the generic meaning of

science as such. It lies, rather, to anticipate a later contention, in the assumption of identity between plurality and pluralism.

What status should be ascribed to rival philosophies of science? Are they mutually exclusive? Is their multiplicity ultimate? Or, without forfeiting their diversity, are they conceivable as generic in a wider sense? Is there a philosophy capable of including within it as sub-genera the generic interpretations advanced by competing philosophies of science? If so, what philosophy is qualified to undertake such a synthetic task?

The problem of the generic meaning of science, which is open to sundry interpretations, thus becomes transferred to another level of inquiry. The problem is in principle the same but germane not so much to the nexus of separate sciences as to the nexus of separate theories of science. And the need for some nexus appears as imperative for the latter as for the former.

Consider the anomaly of turning into a Leibnizian pluralism plural generifications of science, each generification self-centered and self-contained. With respect to the sciences themselves, each concerned with its own non-interchangeable subject matter, a monadological conception might *à la rigueur* possess some semblance of plausibility. Applied to generic theories of science, referring as they do to the same universe of discourse, such a conception cannot be easily entertained. There doubtless are plural entities lending themselves to pluralistic interpretations but questionably those exemplified by theories of science. For these are about a common subject matter and a common problem; the subject matter being the collection of separate sciences and the problem their alleged unity and continuity. How could such theories differ except in relation to the same field of inquiry? How could they compete if not within a shared context of thought? If the requisite data inevitably vary, are they not data culled by comparison from disciplines presupposed equally for all generic interpretations? The notion of monadic uniqueness applied to every philosophy of science, can it be anything more than the product of comic discourse?

The dialectic involved in the assumption of monadic sciences

thus reappears in more extreme form when the same assumption is made about philosophies of science. Such philosophies, since they possess a common frame of reference, are comparable from the start, whereas comparisons of the sciences supervene upon their prior status as separate domains of inquiry. An interchangeable subject matter is peculiar not to the sciences but to their generic theories. Hence a question of considerable importance: Do the generifications relating to theories of science resemble the generifications to which the sciences themselves are amenable?

The significance of the question should be evident. I have argued at length that whatever generic meaning the sciences have is one bestowed upon them by the grace of philosophy. But if any generic meaning is to accrue to theories of science, whence can it come if not through a philosophic dispensation? Is self-generation of its own generic traits a prerogative function of philosophic thought? I need not underline the question's apparent oddity. From this the sciences are exempt owing chiefly to the distribution of their cognitive tasks. Yet, it is precisely the distributive character of scientific cognition that serves to provoke the generic issue leading step by step to the dialectic so far adumbrated.

Here, before proceeding, it might not be amiss to rehearse the salient points of the dialectic.

1. Generic resemblances of the sciences may be always disclosed, for data needed for their exhibition are never wanting. Although special in content and procedure, the sciences are subject to the method of comparison on the basis of which they may be accorded membership in the same cognitive family.

2. But the comparative data required for a generic conception of science are not compulsory. The sciences are open to comparison from different points of view, the point of view of one philosophy not being exchangeable for that of another, with the result that of a generic conception of science many variants are possible, corresponding to the variety of comparative studies

that might be instituted under the direction of competitive philosophic positions.

3. Since various versions of the unity of science are possible, how interpret their order and connection? Either the generic conceptions are altogether unique, in which case their conceded plurality turns into an ultimate pluralism, or else they are essentially comparable, in which case their interpretation as sub-genera within a more inclusive unity becomes feasible. The "pluralistic" horn of the dilemma (if a dilemma it be) leaves the different generic conceptions divested of internal relations, their assumed uniqueness precluding reference to a shared subject matter; the "monistic" horn, while saving their relation to the same subject matter, and thus their relation to one another, is faced with the problem of justifying one holistic conception as over-arching all other holistic conceptions.

4. The problem of unifying the plurality of the sciences is in principle cognate with the problem of subsuming under a common genus the various generic conceptions of science, with the understanding, however, that the dilemma mentioned is a matter of scientific unconcern. The dilemma is strictly and explicitly a metascientific one. The sciences, not being required to establish their consimilarity, are not confronted by "the problem of the One and the Many"; in their separateness and exclusiveness lies their chief cognitive merit; and whether their alleged continuity can be harmonized with their actual discreteness is something no science can expressly grapple with. It falls within philosophy to query, (a) whether the plurality of the sciences does or does not constitute an ultimate pluralism, (b) what kind of generic unity the sciences admit in view of their susceptibility to different modes of comparison, (c) how to meet the issue generated by the possibility of many generic conceptions appearing to be equally germane to the various sciences.

5. The dilemma comes to a head when we consider rival ways of interpreting generically generic conceptions of science. Can such considerations be eschewed? Must the conflict of generifications remain unresolved? How conceive of generic variants as

being, so to speak, incommunicado in view of their initial reference to a concordant subject matter? But think of the alternative. Is the assumption of an all-inclusive genus of genera more tenable? How disconcerting is the notion of a synthesis of syntheses! For such synthesis must devolve either upon but one philosophy or upon each and every philosophy. In the latter case—if generifications of generifications may continue unchecked—the ensuing genera of genera would precipitate the dilemma on a higher level or larger scale as soon as the relations among them were to become the pressing issue. Should *their* plurality be construed as pluralism? If not, if plural generifications be viewed as constituting a single generic system, does the system depend on the self-assumed function by one of the genera to subsume under it all the others? On what basis may a self-asserted claim to generic supremacy be justified?

Such exercise in dialectic may strike some readers as extravagant. The philosophic puzzles disclosed, so they might be disposed to feel, are due principally to the kind of diction employed. I wish I could accept the sanguine belief prevalent in certain quarters that philosophic issues are ultimately linguistic and that no dilemma is proof against semantic treatment. To be sure, there are purely verbal problems not impervious to verbal surgery. But the situation here considered can hardly be remedied or removed by semantic operations. The dialectic is implicit in the generic dimension of philosophic thought supervening upon scientific cognition, and the dialectic is no less "real"—that is, non-verbal—than the cognition it is involved in. And who will commit the folly of asserting that for scientific cognition we are beholden exclusively to the labor of locution? Incidentally, philosophy under the guise of a glorified lexicology, does it not arrogate to itself the privilege of serving as super-genus, all competing philosophic theories being reduced to species of language-structures subject to analysis and criticism by the canons of a self-appointed overarching discipline? Indeed, preoccupation with the generic is a philosophic necessity even when speculation tends to lose itself in the tenuous forms of an ideal syntax.

It is preoccupation with the generic which the dialectic intimated was designed to exemplify. Such preoccupation appears constant amid all variations in subject matter. To view everything in the light of the generic, be it science or religion or art or any other human concern or activity, is the peculiar bent of philosophic thought. The interest in the generic provides philosophy with its main reason for being; to rob philosophy of the generic is to deprive it, so to speak, of a specific function and direction.

The interest in the generic traits *of* science (as distinguished from the interest in the generic traits of a subject matter preëmpted *by* science) must be held to enjoy priority over the interest in the generic traits of other things, and must be so held if, and only if, cognitive significance of a non-reflexive kind is to be convincingly attributed to philosophic thought. But this involves certain assumptions.

(a) Apart from its own reflexive domain, philosophy can lay no claim to special knowledge of subject matter belonging to any science; astronomy or biology, for example, is a cognitive discipline never superseded by a supererogatory philosophy that might absurdly attempt to correct or replace its factual or conceptual content.

(b) Knowledge in the pregnant sense cannot radically depart from scientific, if scientific subject matter is of the sort requiring specification by observational data, in the absence of which empirical inquiry could never be instituted or consummated.

(c) Philosophic knowledge, supervening upon scientific without competing with it, is knowledge concerning the generic nature of things implicit in the generic nature of science, the plurality of the sciences, and *a fortiori* of their contents, crying out for a synoptic interpretation, one akin in principle to the interpretation which the several sciences impose upon their respective materials.

To gainsay these assumptions is either to confuse the cognitive functions of science and philosophy or to reject outright the cognitive claims of philosophic thought. Scientific knowledge, it is hardly necessary to reiterate, is knowledge of isolated subject matter; having no authority over fields other than its own, every

science is inevitably committed to specialization. The demand that philosophy be cognitive in the same sense as science is thus doomed to frustration: we look in vain for philosophic subject matter comparable in specificity with scientific. The conversion of philosophy into science remains chimerical simply because its thought cannot help ranging beyond any limited segment of nature or circumscribed area of facts.

Must all cognitive claims be confined to materials specifiable in accordance with scientific procedure? If the answer is in the affirmative, philosophic claims to knowledge manifestly become pseudo-claims. Philosophic subject matter, not being definable or denotable by data such as the sciences rely upon, transcends the bounds of empirical verification. Were all knowledge scientific and all scientific knowledge empirical, condemnation of philosophic thought as cognitively futile would be unexceptionable.

But on such a view the alleged unity of science becomes an inscrutable cognitive mystery. For science in the singular is *as* singular non-existent: there are in actual operation but separate disciplines unconcerned with their nexus to one another, inter-scientific relations forming no part of the particular subject matter of any science. A theory of scientific unity or continuity is thus *a priori* deprived of any cognitive value; plurality and discreteness of the sciences must accordingly remain irreducible, each justified in moving in the direction of ever greater specialization and ever greater isolation.

In actual practice, it is true, no science *can* properly function except by concentration upon a preëmpted subject matter often explorable with no or little reference to any other. Yet inter-scientific connections are legitimate objects of inquiry, and the concepts of species and genus are essential for discerning the ways in which the sciences exemplify differences and similarity. Of the generic in relation to its own specific contents every science furnishes knowledge ascertainable by it appropriate procedures. Who can deny the cognitive importance of intra-scientific generification? No breach of principle is involved in extending knowability to

such congeneric features as the sciences might reveal to philosophic inquiry.

The lengthy summary of some points made in the course of our discussion has been necessary to drive home the thesis that generification is an activity in cognitive inquiry with which neither science nor philosophy can dispense.

It is principally the philosophic range of generification that appears to be anomalous, bristling with difficulties and confronting us with dilemmas. Reverting to the problem of diversity in connection with philosophic generifications of science, let us consider afresh the alternatives of pluralism and monism.

Are plural generifications to be viewed in pluralistic isolation? Between plurality and pluralism some distinction must of course be drawn. What precisely is the distinction? For the moment (and we shall return to the subject later) let us think of one as a neutral and of the other as a doctrinal term. Confusion might be avoided if for plurality we substituted possible synonyms such as multiplicity, diversity, variety. A collection comprising enumerable or discernible entities is obviously—because tautologously—one of many entities. But the designation of entities as many says nothing about their nature or relations: many are the interpretations to which the many are amenable. Now pluralism is distinguished from plurality in being the name of a philosophic theory. It is a pluralistic theory which endows plural entities with solitariness, separateness, independence, irreducibility, and other attributes signifying their inalienable individuality or uniqueness. And regarding the relations into which they are capable of entering, plural entities are alleged to enjoy priority over them: their relations are usually spoken of as external, in the sense of not being constitutive of the intrinsic nature of the relata in question. Within a pluralistic universe of discourse no set of plural entities need be favored or rejected; the entities may be material or immaterial, inorganic or organic, mathematical or social, simple or complex. Plural entities of whatever sort acquire a pluralistic status if they can be made to conform to categories expressive of their mutual

independence and "windowless" privacy. Leibniz illustrates how far the principle of distributive isolationism may be carried: his *Monadology* is a perfect paradigm for transforming plurality into pluralism.

Categories of pluralism, whether understood in a Leibnizian or non-Leibnizian sense, are applicable, with no offense to reason, that is, without violation of the principle of contradiction, to any units however inherently complex or inwardly related. Philosophies of science, representing such units, may thus be considered as if they were monads in external relations to one another, each mirroring a *vue d'ensemble* of scientific procedure or content from its own perspective and in accordance with its own interest in generification, none being subject to the jurisdiction of its equally solitary and equally autonomous rivals.

Accordingly, a plurality of generifications of science is possible and a pluralism of the same not implausible. Generifications of science by empiricism and rationalism would seem to be mutually isolable if not insulable—in initial approach, in choice of data, in mode of procedure, in conceptual idiom, and in various other ways. Each, synoptic of science as a whole, need not concern itself with the other. Both might be logically conceived, in true monadistic fashion, without intercommunication, though, as a matter of fact, their respective votaries are certainly conversant with one another's achievements. Yet, whatever their impact or even influence, could the position of rationalism be said to have ever been basically modified by empiricism, and *vice versa?* This is likewise true of other mutually exclusive philosophies: vitalism and mechanism, for example, or phenomenalism and physicalism, may unify the sciences in the irreducible terms reflective of ontological positions radically differentiated. On the assumption that such positions are not commensurable or assimilable, the generifications of science under their guidance and control readily accommodate themselves to pluralistic categories.

I have chosen an extreme version of pluralism to which to relate the plural generifications of science. A monadology of the sciences themselves would obviously be untenable, though in view of the

tendency of so many scientific disciplines toward ever increasing specialization and consequent isolation, their resemblance to monads might not always remain lacking in verisimilitude, but a monadology of philosophies of science is not altogether without empirical basis or rational justification. For such philosophies do comport themselves as if they were self-centered and self-sufficient units; and while their generifications are related to a comparable subject matter, they reflect it from singular angles of vision and in non-interchangeable modes of thought. And if pluralism is not a self-inconsistent theory of any plurality, its application to the generifications of science is not contrary to reason.

But why, it may well be asked, advance a contention so deliberately speculative? What is to be gained by conceiving of philosophies of science as exemplifying notions as remote as those of a monadology? The answer, as will appear, is of decided importance, for it has an intimate bearing on the thesis I have been maintaining—namely, that philosophic thought is concerned chiefly with the generic. Is pluralism incompatible with this thesis, and the pluralism especially of generifications of science? If such pluralism even in its most extreme form can be shown to be in support of the thesis, the brief excursion into monadology will not have been in vain.

A pluralism applied to any plurality cannot escape being a generic conception. For not in the assertion of sheer multiplicity does a pluralistic theory culminate, various and variable though the entities be with which it must perforce begin. To reiterate: plurality is not pluralism. Pluralism is plurality rationally conceived, conceived, that is, in terms of a philosophic theory subject to the principle of contradiction.

The plurality of monads, for example, is a plurality ordered and graded and individuated. The monads are uniquely constituted, each endowed with a perspective inalienably its own, and each possessed of an inward nature free from intrusion by any other. Clearly, such a plurality of entities is interpreted rather than given, and though a product of interpretation, it is not

without probative force. Leibniz, at any rate, and those following him, adduced not implausible arguments in favor of a pluralism based on evidence drawn from experience as well as on deductions sanctioned by reason.

Our concern here is not with the details of the theory or with the grounds for or against it. Allusion to the theory in the present context is pertinent mainly because it illustrates in striking manner how ineradicable from a pluralism, be it ever so excessive, is necessity for generification. This must seem rather anomalous. How could monadic units be conceived as sharing any generic traits or bonds? They are alleged to be unique. There exist by hypothesis no lines of communication between them. None can invade the privacy of the others. Each is a self-contained world on its own scale of being. A Leibnizian monad is an incorrigible solipsist. Every monad is alone; its secluded perspective is the measure of things; its discourse is but soliloquy. How then apply the concept of the generic to a plurality of such units? Any use here made of the concept would appear to involve suppression of its correlative. How speak of true species of monads if each is assumed to be literally and absolutely *sui generis?* Supposing, however, the concept of species here retained, what sort of species could a monad be said to exemplify except one that exhausts the entire genus? Species and genus so completely coinciding would seem to represent a flagrant case of a distinction without a difference.

And precisely because there is a plurality of monads their pluralism cannot be supported save by concepts descriptive of features they must have in common. To begin with, why call them monads? In what consists their monadic nature? The monads of Leibniz, which in certain respects are said to resemble material atoms, certainly admit, as do their physical counterparts, of generic interpretation. Of the congenerous characteristics pertaining to atoms the concept of atomicity serves as an abstract epitome. Under atomicity it is possible to subsume comparable forms or operations attributable to entities varying specifically in multiplex ways. Let the difference between particular atoms be ever so

great, the difference, it is generally held, can be no greater than that between species of the same genus. What is true of atomicity as a generic notion is apposite also to its analogue. Monadicity, too, expresses the consimilarity of the different monads: every monad is like every other in being individual, in being solitary, in being independent, in being hermetically sealed, in being an inward miniature of the universe, and so on. And if we regard them as exemplars of solipsism, as indeed we must, the solipsism of each is equatable with the solipsism of the others, not of course by the immured "soul-atoms" themselves, but by the philosopher capable of imagining a plurality of them.

Solipsism *en masse*—is this not the gist of the Leibnizian *Monadology?* And could pluralism be carried further? Yet such pluralism, too, requires for its conception generic notions and principles. A brief comment or two may bring the issue into sharper focus.

A plethora of solipsists would seem to escape the difficulties alleged to result from positing but a single specimen. There might possibly be, as the saying goes, "safety in numbers." But to make plural solipsism credible, two assumptions are requisite, to wit, (a) that the monads constitute a perspectival continuum and (b) that their perspectival harmony is preëstablished. The first is necessary to secure the individuality and hierarchy of the separate solipsists and the second to account for the same world being mirrored by them. But for the latter assumption plural solipsism would manifestly entail a plurality of disparate worlds. The world's very unity and continuity is thus affirmed to be demonstrable by a pluralism most radical in conception. This is indeed a great feat of philosophic imagination.

The crux of the matter is the assumption of a perspectival harmony preëstablished, so to speak, by a *deus ex machina.* The invocation of a *deus* for the solution of their contrived paradoxes is not uncommon among philosophers. By Descartes God was called upon to extricate him from the anomalies of excessive doubt and by Berkeley to save him from the anomalies of excessive

credulity. In both cases, however, as shown in earlier chapters,[2] God becomes too deeply enmeshed in initial excesses to be capable of bringing about their subsequent attenuation. The appeal to God is of no avail if neither his existence nor his nature can be demonstrated by methods proffered as unimpeachable: the Cartesian God is not revealed to a mind doubting nor the Berkleyan to a mind perceiving. Paradoxes ensuing from uncompromising adherence to a certain method will remain in force until the method is either betrayed or superseded.

Now plural solipsism is in a like predicament: the method to which it owes cogency cannot be alleviated by God to ward off whatever paradoxes the method itself precipitates. The harmony imposed upon the monads from without is clearly incompatible with their intrinsic mode of being as originally proved. They are proved as representing a series of endlessly varied perspectival differences, the necessity for their harmony being extraneous, that is, extra-monadological. To assume God as source of their perspectival concord is to import into the *Monadology* a principle essentially alien to it.

But this way of stating the matter leaves entirely out of consideration the question of God's status within the *Monadology.* Is God, too, a monad, albeit the supreme one; if so, what is his relation to the other monads? Is he but an instance of monadicity, as it were, congeneric with all monadic creatures? Does the divine perspective of the world exclude or does it include the series of lower perspectives? If the former, must we not conceive of God as but one solipsist among many, the preëstablished harmony among them being imposed by a higher power? Is a superior divine being perchance to serve as such a power? And where short of infinity can the regress stop? But if the divine monad comprehends all those of inferior grade, is not God to be regarded as the only true and perfect solipsist? The assumption, however, that the monads are reducible to moments or aspects within a single all-embracing perspective, does this not entail as

[2] See Chapters I and II.

consequence a complete transformation of the monadological doctrine? Plural solipsism now becomes interpretable as a variant of monism: *e pluribus unum.*

Only by tampering with the monadicity of the supreme monad can Leibniz, so it seems, save his monadistic pluralism. This, of course, is a contradiction. But an explanation traceable to an exceptional instance of a universal law or principle runs inevitably the risk of self-inconsistency.

Consider the contention by Leibniz that the possible enjoys priority over the actual. The actual world, as he held, was selected by God out of an infinite number of possible worlds open to God to create. The world we call actual might have been otherwise; that in fact it is not otherwise must be attributed to the choice which God made among the many possible worlds known to him in advance of creation. And since God's choice was determined by his goodness, a better world than the actual must be rejected as inconceivable. If God could have conceived of a better world he would have been under moral compulsion to create it. Since God had present to his mind countless possibles, we must conclude, relying upon his wisdom, that he chose to make actual the best of all possible worlds.

The argument may be challenged on various grounds. For one thing, it presupposes cognitive intimacy with God and his ways. Great indeed must be our knowledge of God to reconstruct his primeval state of mind in the presence of a galaxy of possible worlds. For another thing, the argument presupposes that the actual world, which comprises the totality of all phenomena, is a single eligible entity. And as for the optimism involved in the relation of the actual to the possible, who could not *a priori* reach the opposite conclusion? Imagine a diabolical creator whose design it was to produce the worst of all possible worlds. It would take little ingenuity to prove that the actual world is in conformity with that design. And the rational proof could be strongly buttressed with empirical evidence.

All this, however, is here not altogether relevant. What I wish to show is merely that the priority of the possible is a principle Leibniz could not seriously defend as universal. He must posit something actual as prior, in violation of the principle, or the principle will give us so many possibles that we shall suffer from an embarrassment of riches. The principle resembles not a little the formula that plays such havoc in "The Sorcerer's Apprentice": a competent magician alone could control a procedure contrived to have a reiterative function. According to Leibniz, the actual world resulted from the choice which God made from all the possible worlds present to his mind. The world was merely possible before God elected to make it actual. Yet, prior to all the possible worlds, we must assume as actual the mind of the creator surveying and appraising them. Actual was God. But this actual God, once we suppose that *whatever* is actual is the result of a choice among possibles, must be likewise regarded as the best possible God, chosen from an infinite number by a higher divine being. And that higher being, by the same token, could not be actual unless preferred by a still higher being, and so on *ad infinitum.*

This ineluctably follows if we extend universally the principle that the actual is a created possible. Why did Leibniz limit the application of the principle? Why did he not deduce an actual God from all the possible gods by the same mode of reasoning which induced him to derive the actual world from all the possible worlds? His imagination was certainly not inadequate for the task. Apart from religious scruples, for Leibniz was not unorthodox, the bugbear of an infinite regress stared him in the face. To avoid such a regress we are bidden to take with a dose of salt the assertion concerning the universal priority of the possible over the actual. The validity of the assertion rests on our willingness to make an exception of a particular actual. But if we refuse to do this, and accept the principle as truly or strictly universal, then anything actual, be it a world or be it a god, must be interpreted as having its origin in the possible. If pos-

sible worlds, then possible gods and possible godheads and possible super-godheads and so on; but if anything actual is assumed as prior, then the possible loses its promordial status.

Accordingly, the argument for the priority of the possible leads either to contradiction or to infinite regress—to the former if it involves something actual as prior, to the latter if it is extended to everything actual.

If we disregard the theological speculation, and take seriously the Leibnizian argument drawn from the human level, the difficulty is no less apparent. It is true that thought can think what it pleases, save that which implies an absolute contradiction, and in this sense the field of the possible is wider than that of the actual. But this by itself could not guarantee the priority of the possible; it would only prove that the realm of thought is more extensive than the realm of fact. The principle of "sufficient reason," dominating the actual and legislating for it, is a principle derived from thought; we are thus assured in advance or *a priori* that the possible revealed by thought is the genus of which the actual is a species. It is the theory that the actual must conform to principles having their origin in pure reason which furnishes the deduction for the priority of the possible. But here, too, there is a dilemma which may be stated as follows.

The possible, which is by definition the thinkable, is meaningless unless we postulate some thinker capable of thinking it. Is the thinker actual or possible? If an actual thinker is requisite for thinking the possible, his priority contradicts the assertion that the possible is universally prior to the actual, the actuality of the thinker being the exception which disproves the rule. But if we assume that the possible is to be thought, not by an actual but only by a possible thinker, the thinker becomes one of the possibles, thinkable by another possible thinker, and so on *ad infinitum.*

The truth is that Leibniz could not dispense with the actual without reducing to absurdity the contention that the possible is absolutely prior to it. What relieves the contention of absurdity

is surreptitious investiture of something actual (an actual deity or an actual thinker) with exceptional primacy.[3]

The examples from Leibniz, torn from their contexts, and treated with such brevity, may strike the learned as impertinent. If in my allusion to a great philosopher I seem to have taken liberties with his text, I can only plead that it was never my intention to invade the field of exegesis. I shall not argue the point if connoisseurs of Leibniz find me guilty of misunderstanding. But I have not deliberately sought to offer a caricature though, as not unknown, even that genre of exposition need not be wholly misleading.

Be that as it may, the speculative issues raised, irrespective of their relation to Leibniz, are real issues. They show that in discovery or production of the generic lies the cognitive task of philosophic thought. And this, too, they show, that search or construction of the generic entails priority of the specific in which alone the generic can have its fount and origin, unless the specific and the generic are made to coalesce, in which case the fallacy committed is that of suppressing one of the correlatives. If between genus and species there is distinction as well as difference, no genus is conceivable without prior species—and species in the plural; for to speak of a single entity as being both species and genus, which the expression *sui generis* might be taken to imply, is either to confuse the correlatives or to abandon one in favor of the other.

Plurality of objects, whatever they be, is thus an indispensable condition of philosophic thought (a) if such thought's main concern is with the generic and (b) if the generic connotes discernible similarity of things given antecedently as specific.

How indeed could philosophy exercise its generic function without presupposing plural species? Plurality obviously enjoys indefeasible priority over its correlative, no significant unity being

[3] For a more detailed examination of the subject, cf. the writer's "Possibility and Context," in *University of California Publications in Philosophy*, Vol. XVII, pp. 79-105, from which some paragraphs are here reproduced in modified form.

operationally possible without reference to unifiable contents. Plurality, in short, is fundamental to every philosophy: not over the actual luxuriance of things do philosophers disagree but rather over the status of surplusage in an interpretative scheme. How classify the sundry kinds of plurality? Are they basically equatable? If incommensurable, do some possess priority, and what sort of priority? By what method and in what idiom may they be distinguished and related? What criterion determines choice among their possible generifications? And is there some principle of harmony to which conflicting generifications may be rendered amenable?

Such in abstract language and without allusion to Leibniz are some of the ultimate issues inevitably bound up with the generic activity of thought.

And since plurality is a category fundamental to every philosophy, pluralism must be understood as constituting but one generic theory among many, and the Leibnizian *Monadology,* precisely because of the extreme pluralistic position it maintains, is a signal confirmation of this thesis. To put it in a way seemingly paradoxical, pluralism is a unification of plurality in terms shown to be universally and equally applicable to the congeries of units. No paradox, however, attaches to a philosophy of pluralism as such unless stretched beyond the point of cogency, a point apparently reached by Leibniz in his pluralistic conceptions of hermetic perspectives and unrealized worlds. And the line beyond cogency appears still further extended by invoking divine remedies for conclusions logically irreparable.

But must pluralism be entertained in forms such as require resort to paradoxes for the relief of paradoxes? To this question we shall revert later.

Meanwhile we must not lose sight of the special kind of plurality introduced for the purpose of contending for the cognitive aspect of philosophy—namely, the plurality of the sciences. Their plurality is an indisputable fact, their pluralism a debatable theory. Their pluralism can clearly not be construed in monadological terms without carrying to unconscionable lengths their cognitive

separateness and isolation. The sciences are indeed differentiable but they are also comparable. They certainly yield to *various* generic conceptions. Are these plural conceptions interpretable pluralistically? An affirmative answer would not be contrary to reason if the philosophic positions controlling the generifications could be shown to conform to pluralistic categories. But before pursuing further the pluralistic hypothesis we must consider the alternative. A monistic generification of generifications requires careful scrutiny and can of course not be ruled out of court in advance.

Chapter X

GENERIC IMPORT OF PHILOSOPHIC THOUGHT, II

Ubiquitous evidence of plurality cannot by itself serve as evidence sufficient for pluralism. Between the two terms, as already intimated, a fairly sharp line must be drawn. In general, plurality is the antecedent and pluralism the consequent of inquiry or, speaking less abstractly, one denotes a fact of experience, the other a reasoned philosophy. To be sure, pluralism is a philosophy about plurality but so, strange to say, is every other philosophy. And like all philosophy, strange to say, too, pluralism is intent upon seeing unity in plurality. To deny this is to assume that in pluralism philosophic thought fails to exercise a generic function. This function, however, if the thesis we have been defending is not invalid, defines the very nature of philosophy in its cognitive aspect. By renouncing generification of the diverse as its proper task, any philosophy, pluralism not excepted, simply ceases to be philosophy.

As a matter of fact, no pluralism with claims to intelligibility has ever relinquished such task. Philosophic atomism, for example, if we accept Emile Meyerson's authoritative view, affords a signal illustration of this. And generification, curiously enough, may even be pushed, as does Meyerson, to the limit of identification. This calls for some comment.

Meyerson's general view as embodied in works of massive erudition is here singularly instructive, for he regards identification of the diverse as constituting the very core of rational thought.[1]

[1] *Identité et realité,* 1908 (English translation by Kate Loewenberg), *L'explication dans les sciences,* 1921, *La déduction relativiste,* 1925, *Du cheminement de la pensée,* 1931.

Indeed, according to him, to think is to identify. All intellectual acts are treated by him as species of one generic process. He detects the process at work in definition, abstraction, generalization, subsumption, explanation; he finds it operative in the creation of concepts, the construction of classes, the hypostatization of universals, the formulation of propositions, the statement of laws, the search for causes, the elaboration of theories. Identical in all ratiocinations is reason's ineradicable propensity to identify, all theoretical products ultimately appearing as identities supplanting diversities. Science and philosophy would go by the board if the identifying activity as thus set forth were supposed abolished, for under such supposition knowledge would become mere awareness of sheer plurality.

Kant's *Gewühl der Erscheinungen,* too, would be cognition's sole residue were we to assume cessation of mind's formative activity. There is a deep affinity between Meyerson and Kant: knowledge for both depends on unifying acts of thought in relation to the diversity of contents. But whereas for Kant the nature of thought is equivalent to that of judgment (otherwise he could hardly have regarded the forms of judgment as source of the *a priori* categories required for the possibility of experience), for Meyerson the peculiar tendency of thought is to fashion identities out of diversities, judgment being but one expression of that tendency. Consequently, if thinking and judging are synonymous, then in ferreting out the *a priori* we are obliged to fasten upon *a priori* judgments; but if judgments are induced by the tendency to identify diversities, then an *a priori* character can obviously not pertain to any judgment, conditioned as it is by diversities antecedently given or posited, but only to the tendency setting in motion their identification, on the view that such a tendency is the sole hallmark of *intellectus ipse* (a Leibnizian expression often employed by Meyerson). But comparison of Kant and Meyerson is here but parenthetical and not strictly pertinent.[2]

What is relevant here is the application of Meyerson's general

[2] Cf. the writer's "Myerson's Critique of Pure Reason," *The Philosophical Review,* Vol. XLI, No. 4, pp. 351-367.

view to theories of atomism. Such theories, which are versions of pluralism, strikingly exemplify for him mind's rational propensity to unify the many by rendering them equatable and thus intelligible. Ranging through the history of science and philosophy, Meyerson shows how theories of atomism appear time and again, in all lands and under all climes, and in formulations not conceivably dependent on one another—an enigma to votaries of positivism and pragmatism, for such theories, whatever their experimental evidence, are too deductive to be justified on grounds empirical or instrumental. Historically, at all events, their inductive foundations are exceedingly scanty and shaky. Theories of atomism, so he believes, cannot be accounted for except as spontaneous products of reason, having no other purpose than to explain the nature of things in conformity with reason's *a priori* criterion of explanation, a criterion exacting subjection of diversity to the process of identification. The tendency to envisage the diverse as somehow identical, typified for the modern mind alike by the algebraic sign of equality and the copula in judgment, is present in all thinking however primitive. Such, in brief, is Meyerson's principal theme, advanced with copious variations and developed in relation to the major domains of intellectual effort.

The difficulties involved in his view are formidable, and Meyerson is fully aware of them. For taken strictly, identification entails ultimate elimination of the diverse and thus elimination of space and time. Meyerson's ways of dealing with the pitfalls of his theory are certainly ingenious, and sustained study of his major works is requisite for grappling with the issues they raise and meet. When all is said, however, identification (as Meyerson treats it), though far from negligible, remains a challengeable notion.

To avoid the anomalies inherent in identification, it is desirable to substitute for it a concept not so open to question, and such a concept, I submit, is generification. For this concept suggests the synthesis of unity and plurality, and a synthesis inoperative without assuming that it is plurality to which priority pertains. Noth-

ing, it is obvious, can be subject to generification save what is antecedently given as specific. A pluralistic philosphy, no matter how extreme, depends for its cogency on reason's generifying rather than identifying function.

Cursory consideration given in the preceding chapter to Leibniz's *Monadology* served to illustrate a singular synthesis of plurality and unity within the context of a radical pluralism. Monadism no less than atomism is the result of generification. For it is this operation which renders separate entities, internally self-contained, amenable to external relations. How otherwise conceive of them as members of a unitary class or of a continuous series? How speak of them as differing if not as specific instances within the same genus? Unless definable by their common monadicity, how could the monads be thought of as elements of a cosmic structure? In the absence of a common denominator they could hardly be construed as basic constituents of a pluralistic universe: the monads would simply sink to the level of an unintelligible congeries of insulated units.

Monadism is instructive for several reasons. It rests on the distinction as well as relation of plurality and pluralism. As pluralism, involving generification, it represents a synthesis of unity and multiplicity. The diverse units, unlike those of traditional atomism, need not necessarily be conceived as physical and simple. Plurality of units, whatever their specific nature or degree of complexity, may be interpreted as comporting with the categories of a monadology. Applicable to the members of any collection are such categories as uniqueness, separateness, isolation, independence. And relations between them are not excluded provided they be considered "external." Indeed, pluralism and externality of relations are so mutually implicative that the argument for one is an argument for the other.

With some latitude in the use of categories, the plurality of the sciences lend themselves not implausibly to a monadistic interpretation, a notion entertained more or less playfully in a previous chapter. For the sciences do operate in separate and non-interchangeable domains of specialization. It would take

some ingenuity though not without sophistry to convert the principle of topical differentiation to which the sciences owe their relative independence into a principle of complete exclusiveness. The division of the sciences as territorial, each science absorbed in a subject matter inalienably its own, is guarantee against cognitive competition. Nor is coöperation inherent in the nature of scientific activity: the more special the field, the more explorable in isolation, and increasing specialization demands greater withdrawal within a single area. Not impossible therefore is pluralistic generification of the plural sciences: their common trait consists in enjoyment of equal autonomy. The sciences, be they ever so different in content or procedure, might well be looked upon as constituting a class of disciplines congeneric in their exercise of self-determination in the conduct of inquiry and in their singular freedom from mutual interference or encroachment.

Irreconcilable with such pluralistic generification are certain undeniable facts. While it is true that as a consequence of unlimited specialization the evolution of the sciences into quasi-Leibnizian monads is not inconceivable, their past and present status militates against a pluralistic interpretation. The plurality of the sciences can be hardly disputed but it is a plurality with a history. Time was when philosophy represented an all-embracing cognitive genus and natural philosophy, comprising the disciplines we now call scientific, one of its species. How think of the sciences as pluralistic in view of their original and common matrix? Besides, they are not equally "cabined, cribbed, confined": some, as the physical sciences, are relatively contiguous, and between certain of these, as between physics and chemistry, contiguity is tantamount to continuity. In the light of such considerations a pluralistic generification could hardly be taken seriously.

Monistic generifications have greater claim to validity: the sciences are clearly unifiable as regards method or subject matter. Open to comparison, their unity becomes a demonstrable conception, the discovery of Science in the sciences being a task devolving upon philosophy. But, as shown before, there is more than one way of unifying the sciences, comparable as they are from

different points of view and in conformity with different philosophic persuasions. Since many generifications of science are possible, it is *their* relations that becomes the pressing issue. Are the relations external or internal? This is one form in which the issue may be stated. The other form may be worded thus: Do plural generifications of science themselves admit generification, and if so, is the generification to be conceived in the terms of pluralism or monism?

Not the sciences but rather their generifications appear to lend themselves to a pluralistic interpretation. A supposititious pluralism of the former is indeed but a speculative whimsey; no oddity, however, can be said to pertain to a pluralistic view of theories of science. Such theories are strikingly monadic in perspective, and monadic they remain despite comparability with respect to given content (namely, the diversity of the sciences) and holistic intent (to wit, comprehension of the sciences in their unity). Each theory seems complete in its own categories in the sense of being indifferent to those of its rivals. A physicalistic theory, for example, need not accommodate itself to a phenomenalistic, and *vice versa.* Between philosophies of science sundry relations are of course possible but such as might belong to them are not internal ones. Vitalism and mechanism, to vary the illustration, are intrinsically independent of each other. And the same independence is characteristic of every synoptic theory based upon comparison from a chosen perspective of scientific procedures and scientific subjects. Comparison from a different perspective culminating in a different generification has no effect on the monadistic nature of the perspective chosen. No perspective can be made to implicate or to dominate another. Consequently a generification of science controlled and guided by a certain philosophy speaks in its peculiar idiom and accent and is not deducible from or reducible to an alien generification.

This monadistic pluralism is simply the pluralism of the perspectives governing the generifying operation of thought. Generifications of science, though inevitably divergent, have thus the status of being equal instances of monadicity, equal, that is, in

uniqueness and irreducibility, in separateness and independence. Their relations can obviously not be other than external, yet in being relatable at all, ways of generifying the sciences become themselves generifiable in accordance with the canons of a pluralistic philosophy.

For a fuller appraisal of this thesis we shall return later after consideration of its principal alternative. If monadistic pluralism exemplifies one pole of integrative thought, dialectical monism expresses the other. For such monism, too, plural units are requisite but their unity depends on the rhythmic logic of internal relations.

If Leibniz be included among the champions of pluralism, surely Hegel must be joined with those of monism. But Hegel's doctrine, even more so than that of Leibniz, is too complex for episodic treatment. Yet no other treatment can here be attempted, textual exegesis being of course out of the question. I must take with Hegel the same liberties I have taken with Leibniz. Philosophers have their illustrative uses; the ideas they are made to represent forfeit none of their importance even though the representations be found to exhibit too much latitude in interpretation. In the case of Hegel, at any rate, such latitude seems unavoidable. Interpreters of Hegel, so said one of them, "have contradicted each other, almost as variously, as the several commentators on the Bible." In free allusion to a thinker so notoriously enigmatic there is thus no scandal.

The designation of Hegel's philosophy as dialectical monism is certainly not inapposite, seeing that it rests on the persuasion that "the truth is the whole"—a whole whose every part involves by hidden concatenation every other part. Holistic truth, which the dialectical method is intent upon, will not be found in the special sciences or in their various generifications; it must be sought in the synthesis of all the areas of human experience and reflection. The whole truth comprehends within its scope the various ways of interpreting the world, including those of art and religion, taken in their evolution and intermutation. The scale to which

Hegel's system is drawn is certainly vast. And the method by which this monistic philosophy is established is double-edged, having a positive and negative side, and in this lies its difficulty as well as profundity.

The positive function of the method consists in proving the need of all the perspectives from which the world may be surveyed and appraised, truth residing in their order and connection. Little acumen is required to note that the perspectives considered singly are incorrigibly particular: they are under the dominance of separate interests, and separate interests, whether scientific or moral or religious, can never be free from bias. We perforce tend to exaggerate the importance of the special perspectives from which we view our world, ignoring or minimizing the significance of some other perspective. The human propensity to magnify a chosen perspective and to endow it with preëminence is scarcely a matter that can escape easy detection.

While the positive task of Hegel's dialectic is to justify the logical necessity of each particular perspective, the negative procedure is to impugn the excessive claims ineluctably made in its behalf. Hegel impeaches the particularity implict in all ideas and beliefs by revealing the illusion from which they suffer. And the impeachment is original. He insinuates himself into the heart of every conception or persuasion as if it were self-sufficient and invincible with the intent of reversing by an immanent criticism its alleged predominance. Disproportionate straining of particular interests becomes fatal to their stability. And in such disproportionate straining Hegel discerns the source of the tragi-comic destiny to which everything human is subject. Boring from within, as it were, Hegel exhibits the inevitable tendency of ideas and beliefs to grow overweening and thus to over-reach themselves. They must pass, as he phrases it, into their opposites.

The dialectical method, no invention of Hegel's, is of ancient origin; it is certainly as old as Socrates and Plato. To express completely the full import of any theme required for Socrates and Plato a process of maintaining successive views to be successively recanted in the light of more comprehensive insights. Of the

same process Kant, too (to mention a pre-Hegelian modern philosopher), made limited use for demonstrating the necessity of recanting one extreme cosmological dogma in favor of its very opposite. New in Hegel is not the method itself but only its detailed and thorough elaboration.

And not lacking in empirical support is the Hegelian method as a process of successive recantation. How great is mankind's capacity for recanting ideas and beliefs which at a certain stage in its history seemed indefeasible and immutable! Clearly, without such capacity, science would have died in infancy and society would still be antediluvian. For Hegel, however, continual recantation is not fortuitous. Ideas and beliefs may be arranged in the order of their development. Those renounced do not vanish entirely. They leave their traces in those that take their place. There is advance from the old to the new. And the growth of the new out of the old, be the growth one in depth or adequacy or power, manifests an evolutionary logic. Man's successive recantation of ideas and beliefs constitutes a hierarchy in which the later appear better adapted to a multiplex world than the earlier.

The method of successive recantation governing the hierarchy of ideas and beliefs, a hierarchy at once historical and logical, is the method Hegel follows relentlessly in all his works. Whatever theme he touches he expands and deepens by a procedure intent upon proving the necessity of grasping it through a progression of continually recanted insights. Yet none is wholly renounced: it is abandoned only as exclusively adequate: in the hierarchy of insights it has an indelible place. Each insight is necessary but insufficient. Requisite for the comprehension of every theme is a progressive series of conceptions, each false taken singly but each indispensable as member of the series.

Truth for Hegel thus consists in a hierarchical series of insights or conceptions in which every member is determined by recantation of its predecessor's putative adequacy. An inescapable ambivalence accordingly infects all particular ideas and beliefs: we cannot avoid embracing yet are forced to abandon their isolable claims. In this lies the ubiquity of contradiction, the logical root

of it being the necessity of using separately mutually implicative categories.

The categories of thought constitute a dynamic order: every category is indispensable but every category in incomplete from the standpoint of reason which aims to grasp the world in its fullness and coherence. To his vision of a restless reason may be traced the chief difficulty of Hegel's logic. But this vision is also the source of its great profundity. The interpretation of the world in its wholeness requires that we pass from category to category. Each, though necessary, is insufficient. The attempt to consider it sufficient leads to contradiction and hence to retraction of its assumed adequacy in favor of another category possessing greater scope and validity. The result is a logic in which categories reveal themselves as advancing from lower to higher by an inherent rhythm of successive abandonment, every abandoned category serving as a step on a Jacob's ladder ascending to the total synopsis of the world.

It is not misleading, I think, to speak of the dialectic of the categories as inspired by a dramatic principle: the dialectic greatly resembles the structure of a play of which the acts and scenes move in cumulative fashion to a momentous climax. Sequence and continuity are here the criteria of significance: the categories that precede and the categories that follow are bound together by the internality of their relations: every category is but a "moment" playing its histrionic part in the growth and development of an encyclopedic plot.

But what more precisely is Hegel's dialectic a dialectic of? What ultimately are its objects of application? In stating these objects I have availed myself of a varied vocabulary. I have spoken of perspectives and persuasions, ideas and beliefs, insights and categories. These indeed are the plural units, if one may say so, envisaged by Hegel as amenable to dramatic treatment and as thus forming a single dialectical pattern. But the units related in one scheme are not the same related in another: events as units of history are not as such equatable with concepts which are units of discourse. Which is prior—the dialectic of history

or the dialectic of discourse? This question is of course crucial and one notably subject to conflicting interpretations.

This, however, is not here our concern. The general import of Hegel's method is clear enough under whatever terms we subsume the objects to which he deemed it primarily applicable. Our interest in the method, it must be recalled, is without exegetical intent. In the present context, therefore, we need focus attention on but two salient features, and these can neither affect nor be affected by ultimate explanations of Hegel's doctrine.

1. One aspect of the method has to do with the fact that the objects to which it is said to apply must be initially conceived as general or typical. Be the objects (as in the *Phenomenology*) recurrent persuasions or (as in the *Logic*) basic categories, they are, in the idiom I have adopted, products of generification. It devolves upon the dialectic to show the distinguishable but inseparable meaning of all correlatives, a task—and this requires emphasis—presupposing for its very possibility antecedent conjunction of the universal and the particular. And the particular, strange to say, is of particular importance, exercising as it does a twofold function, for every universal, the object to which alone the method applies, must be a particular universal, one of a distinct kind or grade, and such universal would be without significance if it failed to possess particular exemplifications. If we think of genera as universal, we may interpret the dialectic as having for its pertinent themes specific genera of which each must comprehend its appropriate species.

This point, essential for our thesis, calls for clarification.

To elucidate what I have in mind I shall allude to the *Phenomenology* rather than the *Logic,* the distinction between the two major works being not of method but of content.

The *Phenomenology* is a treatise purporting to be an idealized biography of human experience. It is of course not a chronicle of the life of mind arranged in a temporal order on the basis of documentary evidence. Phenomenology, according to Hegel, is not history. What Hegel undertakes is to rehearse the typical

attitudes toward the world on the part of a subject conceived as generic. We have here assembled all the varieties of persuasion by which *homo sapiens* is dominated always and everywhere. To the pervasive issues confronting this generic subject hardly a recurrent response is here overlooked. Man's reiterable notions—for example, of mind and nature and society and God—are here presented in a form both universal and particular, and particular in the dual sense mentioned. These notions differ in kind and degree: they are specific universal themes with distinct particular variations. Themes as well as variations are diagnostic; but whereas the themes, which are ideally conceived, have symbolic rather than actual verisimilitude, the variations are discernible within the compass of human experience as recorded through the media of history and art. The content of the *Phenomenology,* in short, consists of genera ingeniously distilled from species empirically discoverable. Although highly imaginative, Hegel's enterprise is far from imaginary.

The thematic material of the *Phenomenology* thus appears as generified in accordance with the requirements of the dialectic. For what the dialectic presupposes is every theme's assertability in complete detachment from every other as if its status were that of monadic self-sufficiency. Its assertability as absolute in meaning or value is a sort of hypothesis contrary to fact, for no theme *can* be consistently asserted without becoming superseded and assimilated by its opposite. Reflective enactment of a theme conceived in isolation inevitably generates a counter-theme; theme and counter-theme, though mutually exclusive, become included as co-equal constituents of a different thematic complex. This new complex, too, exemplifies the same pattern: deemed initially monadic, it proves upon reflection to contain its own other as an inseparable part of itself, requiring reconstruction on a "higher" level. To be sure, to this continual process there is for Hegel an "end," and a peculiar one; the process is made to culminate in an all-embracing theme representing the dialectical concatenation of the lesser themes, in conformity with the basic contention that the truth is the whole.

But the process itself, which produces everywhere immanent tension to be progressively transcended, constitutes the heart of the dialectic. Needed to set the process in motion and to keep it going is the inchoate attempt to assert what ultimately proves unassertable. And this is a theme's monadicity. All the themes covered in the *Phenomenology,* which are mind's typical persuasions, are shown to run their course according to the dialectic intimated. They come from one extreme and they pass into another. The tendency of persuasions to move from pole to pole, from absolute self-assertion to relative self-surrender, Hegel disengages as a pervasive law in the life of reason.

I speak of the contents of the *Phenomenology* as "themes" with the intent of accentuating their generic status, for they presuppose sundry "variations" in the sundry contexts of human cognition and valuation. In Hegel's text, they appear as universal persuasions concerning the world's multiplex aspects confronting mind as mind.

And I speak of them as "persuasions" in order to emphasize their perspectival idiosyncrasy. For in the *Phenomenology,* it is important to note, Hegel does not deal with the intrinsic nature of the world but only with the necessary conceptions of it bred in the human mind. And these conceptions must be grasped in abstraction from their psychological differences and historical manifestations. Only thus can each be treated as a singular persuasion entertained from a certain perspective, ineluctable from its own position and indefeasible in its own terms, provided—and the proviso is fundamental—the position and terms can be made to retain the essential meaning initially ascribed to them. Hence no perspective is exchangeable for another; even when superseded and assimilated by another, its individual character remains preserved in sublimated form, as it were, on succeeding levels.

Since perspectival privacy and uniqueness belong to the persuasions rehearsed in the *Phenomenology,* I venture to speak of them as "monadic." Between them and the Leibnizian monads there is a striking resemblance. As asserted originally, each persuasion does mirror the world from its peculiar angle, and its

way of reflecting the world is one which no other can duplicate or abolish. Had Hegel attempted no more than to marshal in serial progression the generic varieties of human experience corresponding to their singular perspectives, his *Phenomenology* would have simply been a recondite version of a pure *Monadology.*

Hegel's work, however, though not free from obfuscation, is very complicated; being in structure rather dramatic than serial, it transcends in one sense and in quite another retains a monadology. For what Hegel, unlike Leibniz, is intent upon is the career of his monads. And it is a career, as he shows, which follows a uniform pattern: persuasions must begin by asserting their monadic claims; they discover in the process of asserting such claims a negative element subversive of their putative self-sufficiency; they enter a higher truth which preserves in modified form their title to uniqueness.

Hegelian monads (if such they be) ultimately differ from Leibnizian in being individual without being solitary. For not in isolation lies their uniqueness. In his holistic notion of truth is to be found Hegel's principle of individuation. No persuasion taken singly and separately can be said to be true, wedded as it ever is to a negative mate; but within the dialectical system every persuasion has its essential function and thus its indelible truth. Truth for Hegel is not unlike a chorus. It is heard through many and different voices. Although none by itself can carry the burden of the entire song, each voice utters a necessary part of the total meaning.

The dialectical method may thus be seen to involve an ambivalent monadology. Phenomenological persuasions appear at the outset as if they were Leibnizian monads, absolute in their "windowless" insulation, and so appear they *must* if the dialectic is to perform its negative office, one consisting in rendering explicit the absurdity implicit in the assertion of *apparent* monadicity. Yet, it is the positive aim of the dialectic to vindicate attribution of *real* monadicity to all phenomenological persuasions by exhibiting their perspectival uniqueness in a cosmos of perspectives. Monadic plurality, which in Leibniz is the basis of solipsistic

pluralism, becomes in Hegel transformed into a spiritual monism.

The *Logic,* whether or not we concur in regarding it as the Bible of Hegelianism, is certainly an impressive revelation of dialectical monism, the plurality unified comprising the basic categories of thought. The cosmos achieved is a cosmos at once of discourse and of being, since the categories are held to express *ab initio* the identity of "the real" and "the rational." It is an identity of which the *Phenomenology* is alleged to have furnished the deduction. Actually, however, persuasions and categories are themes resisting identification, the difference between phenomenology and ontology remaining irreducible, and the question of priority is here particularly crucial; nevertheless, and regardless of their distinction and relation, categories and persuasions run a similar course. Categories, too, are generic entities destined to exchange a spurious for a genuine monadic state: the initial experiment with their mutual exclusiveness, an experiment culminating in contradiction, becomes the very condition for discovering their mutual inclusiveness within a single hierarchical order. Before the categories can appear as dependent on their internal relations, they must first be treated as entities in absolute separation. The dialectical logic is such that a supposititious Leibnizian pluralism must serve as underpinning for Hegel's over-arching monism.

So much for the first point—namely, that Hegel's method requires for its application a plurality of antecedently generified entities, be they persuasions or categories, amenable to monistic rather than pluralistic unification.

2. The other point here relevant need not be considered at great length. It concerns the contention that by the dialectical method alone could plurality be vindicated without surrender to pluralism. How valid is the contention? Is the method adaptable to the defense of a uniquely holistic philosophy?

How anomalous is the relation between the result of Hegel's philosophy and the method deemed necessary to achieve it! The result envisaged is truth in systematic unity, the last persuasion or

category closing, as it were, the circle of conflicts or contradictions generated by the first, but no such happy issue can be fathered upon the method without forcibly arresting its operation. The method itself can attain no "end," whether in a sense temporal or non-temporal, simply because the law under which it operates demands that any generified entity produce by an immanent process its own other. There can be no exception to the universal principle that conversion into its opposite must befall every persuasion or category no matter how ascensive in scale or comprehensive in synthesis.

What this implies is obvious enough: a non-Hegelian philosophy must inevitably replace the Hegelian, to be superseded in its turn by its contrary, and so on—doctrines without end; all in accordance with a method granting no exemption from the inexorable rule that everything pass into its appropriate antithesis.

In terms of the familiar Hegelian idiom, thought, it is clear, can rest content neither with a "higher synthesis" nor with a "higher antithesis." No conceivable synthesis or antithesis can ever be so "high" as to preclude emergence of a new situation requiring reconstruction. And how speak of either as the "highest," in the sense of foreclosing transition to anything beyond, without doing violence to the method? To suspend its progress is to destroy its validity. Since the method must perpetually operate to unite opposites and to provide opposition to the ensuing union, reconciliation always following upon antagonism and antagonism upon reconciliation, it matters not at all—*if* the advance of the method is to be stayed—whether we regard the ultimate fruition as positive or negative.

Viewed from a human and historical perspective, there can indeed be no dialectical culmination except in a relative synthesis, one *pro tempore,* fated to be superseded. To think otherwise is to abandon time and the human scene. And this precisely constitutes the gravamen of the charge against Hegel: his grandiose theory of the dialectic as the dialectic of a divine Logos entails flight from the mundane sphere to the empyrean. Transference of the dialectic from the finite plane to the Absolute, which in-

volves the anomalous conception of a timeless process, completely transfigures its original purport as a discursive method. Could such transfiguration be realized without condemning the method to ultimate bankruptcy? Just as Leibniz could not dispense with a *deus ex machina* to establish among his monads a harmony incompatible with the method to which they owed their distributive solipsism, so Hegel, too, needed a foreign agent to endow with finality and completeness a preternatural synthesis at variance with his chosen procedure. But recourse to divine interference with a process threatening to run wild is, as noted earlier, no novelty in philosophy. Yet, what irony that prescription of its betrayal by an Absolute should be proffered as a legitimate defense of the dialectic!

If we follow the method without demanding arbitrary suspension of its operation, whether by Hegel's fiat or God's, there can clearly ensue no final holistic synthesis. A *dialectical* monism proves untenable. An infinite succession of syntheses—and this is what the method ineluctably entails—represents a totality ever expanding and hence ever unfinished. What then of Hegel's famous dictum that "the truth is the whole"? Can it claim to be more than an apothegm? If truth is dialectical in structure, the whole which is alleged to be its object, always eludes completion by any imaginable synthesis; and if the whole denotes a synthesis all-inclusive and all-conclusive, the truth thereof remains unattainable by any process consistently dialectical. From this egregious dilemma there would appear to be no escape: either a dialectic outrunning monism or a monism contravening the dialectic. Hegelian dialectic and Hegelian monism are simply at loggerheads.

As long as the method can in principle not serve to support the contention of a single and ultimate synthesis, how defend the doctrine of internal relations said to interlock the various generic entities—namely, persuasions and categories and societies and sciences and arts and religions? These entities cannot be shown to be organically related except within a whole that sustains and is in turn sustained by them. But of such a whole there is no demonstrable proof. Although presupposed for the dialectic, it

lies beyond its reach. What the dialectic assumes, the dialectic cannot validate. The holistic fallacy, if we may so call it, involved in Hegel's use of the dialectic, is glaring. His much vaunted supreme synthesis is either gratuitous or forever elusory, being the former as a putative condition for starting the dialectical process and the latter if held to issue from that process.

The dialectic appears in a different light if viewed as a procedure not predetermining the outcome. If allowed thus to function, however, the dialectic becomes a suitable instrument of thought for the defense of sundry kinds of non-absolutistic holism.

The history of philosophy, for example, as Hegel conceived of it, accords to no small extent with his dialectic, and many a writer otherwise hostile to Hegel's position finds it not unnatural to borrow his idiom for the presentation of certain doctrines. To mention but one familiar instance, what textbook fails to record the opposition of Continental Rationalism and British Empiricism as having passed into the higher unity of Kantian Criticism?

Were the story of philosophy the story of its individual votaries, the attempt to read a dialectic into it would be preposterous. Particular thinkers as particular could scarce be compressed within the compass of a hierarchical scheme. Nothing could be more distortive of their spontaneous reflections or immanent development than to earmark them as "synthetic" in relation to their predecessors or "antithetic" in relation to their successors. Anything autochthonal about historical personages would go by the board in applying to them the Hegelian formula.

A dialectical narration of philosophy could be nothing else than narration of complex entities, consisting of movements or schools or systems, and these of course have numerous variations, such as are traceable to the products of their particular spokesmen. Only as objects of generification, to use the vocabulary I have adopted, could the complex entities be set in the direction of a dialectical sequence, thesis generating antithesis and both superseded and assimilated in a higher synthesis. Specific modes of thought as embodied prior to their generification in the works of their individual adherents could hardly without falsification be made to

exemplify complete parallelism between their temporal and dialectical evolution. Even Hegel's ingenuity was not equal to the task. The recital of philosophy as undertaken by Hegel is indeed a recital of actual tenets but of tenets generified for the purpose of exhibiting their nexus within a repetitive triadic pattern, the nexus deriving significance from the prior generification consonant with it. Another generification would naturally serve as basis of a different nexus.

Yet Hegel's holistic conception of philosophy, imaginative though it be, is not fanciful: it mirrors not inaccurately but in a relative way the general tendency of speculative ideas to appear as poles apart only to reappear as complementary. The conception becomes absurd when taken in an absolute sense. Ludicrous indeed is the extravagant claim that speculative thought reaches its climax in Hegel's all-synthetic system. Nothing human, alas, whether in the sphere of Chronos or Logos, can make good its title to finality; when shorn, however, of its pretentiousness, Hegel's dialectical chronicle of speculative thought represents an imposing monument of possible generification.

The complementary nature of polar opposites Hegel strikingly demonstrates in the different holistic philosophies of which the system is all compact. The philosophies are plural and they are holistic. Those concerned with religion and art and society and history and nature can have no dialectic save in terms of their own dialect, so to speak; their distinctive fields are non-interchangeable though each might be made to exhibit the same formal pattern. No particular holistic sphere, be the sphere that of the political state or of logical discourse, is affected in its uniqueness by the putative necessity which the parts of every whole are under to move from disjunctive to conjunctive relations. The sundry philosophies comprising the system remain irreducible as regards subject matter, irrespective of the fact that they might be united by a common dialectic.

The difficult problem in Hegel touches the connection of his diverse holistic philosophies. Even if the philosophy of nature, for example, could be shown to share the dialectic of the philos-

ophy of history, the argument that they are parts of one another within a more comprehensive whole involves an intolerable strain on the Hegelian method. Granted that the plural philosophies relating to various kinds of subject matter constitute relative wholes, how plausible is the conception of a whole of such wholes, and a whole final and complete? Plausibility such as might conceivably accrue to it on one ground or another could receive no support whatever from the dialectical method. That method, as already intimated, unless checked perforce in full career, must by a sort of immanent impulsion transcend any and every possible synthesis.

The Hegelian argument, if it does not sound too paradoxical to say so, is susceptible of interpretation in favor of pluralism. But the pluralism must be a pluralism of relative wholes. The holistic philosophies propounded in the system are admittedly distinct in subject matter. Comparable they clearly are but solely with respect procedure. No philosophy can take the place of another. The preëmptive contents of a philosophy of law (to use a different example) have no necessary connection with the preëmptive contents of a philosophy of art. Each holistic part of the system is singularly autonomous in relation to the material definitive of its domain. That each depends for its dialectic on the universal categories of thought cannot alter the intrinsic nature of the material. As long as the dialectic cannot perform the miracle of transubstantiation by turning the subject matter of one holistic philosophy into the subject matter of another—as long, for instance, as religion and science must appear in non-interchangeable data to make possible determinate interpretations of them—the plural kinds of holism developed by Hegel lend themselves quite aptly to a pluralistic theory: they are open to unification suprisingly not unlike the unification afforded by Leibniz in connection with his monads.

I thus revert to what many would look upon as curious, namely, the juxtaposition of Leibniz and Hegel. I have invoked the two thinkers to illustrate a great contrast in philosophic generification: monadological pluralism represents one extreme and dialectical

monism another. Yet, no pluralism, no matter how far it be carried, in being a philosophy, can dispense with the concept of unity; conversely, any monism, however inclusive, requires for articulation the concept of plurality. Hegel's version of monism, indeed, is not only rich in plurality, it involves, and may even be said to culminate in, a singular affirmation of pluralism. Of the two extremes, a monism, if construed as absolute, harbors paradoxes more formidable than its rival.

This is apparent when pluralistic and holistic principles are applied to the generifications of the sciences. It must be recalled that Leibnizian and Hegelian ideas have been introduced chiefly for the purpose of pointing up the implications of this central theme. The plural sciences are amenable to plural generifications: the arguments for this view, touching the nerve of philosophic thought, I stated in various forms. How interpret such plurality? Could generifications of the sciences be made to constitute an organically related whole or should they be conceived as independent products in external relations? A theory of generifications in terms of an absolute holism *à la* Hegel can be considered tenable solely on the assumption that but one philosophy has licence to arrogate to itself the task of achieving a final synthesis of all possible syntheses. But this is an arrogation which no philosophy can prevent another from imitating or emulating. Hegelianism, as we know, has never remained without serious and effective challenge.[3] A pluralistic theory of the generifications of the sciences, one that would leave intact in modified form the basic principles of a monadology, could thus be considered more warranted, or at least less anomalous, than a monistic. Since plurality is a concept no philosophy can forgo, a qualified pluralism would seem to emerge as the more defensible alternative.

[3] Herbert Spencer's "synthetic" philosophy, to mention but one example, is far from negligible.

Chapter XI

THE CLAIM FOR PLURALITY

No notion seems less vulnerable as regards claim to priority than the notion of plurality. Attested alike by experience and logic, plurality enjoys singular indefeasibility; no philosophy can dispense with it, and every philosophy must come to terms with it. Pluralism and monism, though poles asunder, have in plurality a common frame of reference. The cursory treatment of Leibniz and Hegel in the foregoing discussion was designed to illustrate this. The *Monadology* and the *Phenomenology,* so widely diverging in method and result, start from a shared presupposition: they take their departure from the variety of perspectives through which the nature of things is alleged to be reflected.

Elaborate arguments are hardly needed to show that plurality is one of the basic notions of cognitive discourse. All inquiry, whatever the subject matter, is perpetually confronted by a wealth of data, and depends upon a profusion of concepts for intelligible articulation of its aims and achievements. We cannot readily question the fundamental nature of plurality without undermining the very possibility of knowledge. It is no wonder that Kant included plurality in the list of his *a priori* categories.

Without plurality, according to Kant, neither the content nor the form of any thought could be distinguished from the content or form of any other. The categories themselves, it is well to remember, constitute a plurality, and only in relation to a "manifold" can they exercise their categorial function. In the absence of such relation, the *Critique* deprecates the categories as "empty." Yet, the correlative of plurality, whether thought of as unity or totality, has equal title to universality and necessity, without which

as governing concept, cognitive discourse would likewise go by the board. Since such discourse can eschew neither correlative, it would seem absurd to suggest that one is less necessary or less universal than the other. In the last analysis, the question at issue is a question of priority. Of the correlatives equally essential, which precedes the other in cognitive inquiry?

If I am laying stress on inquiry, it is because the kind of cognition I am here considering—namely, scientific and philosophic—undeniably represents in inception and outcome a deliberately studied affair. With the problem of cognition in general, such as forms the topic of epistemology, I am at present not concerned. It is a moot question whether cognition in any sense can significantly be spoken of in complete detachment from some process of acquiring it. Be that as it may, however, the cognition to which the sciences lay claim can certainly possess no meaning whatever apart from intimate connection with the various and variable acts of inquiry. Eliminate such acts and all scientific cognition ceases to be scientific. Does this contention apply with equal force to philosophic cognition? Is philosophic knowledge, too, without meaning unless taken in conjunction with modes of inquiry by which it must be instituted and developed? The question touches the nerve of my central thesis and must now be dealt with at some length.

If there were any knowledge separable from inquiry, it would radically differ from scientific in being exempt from the latter's basic presuppositions—to wit, the presupposition of ubiquitous givenness of plurality and the presupposition of fitness of discourse to serve as vehicle of truth. Imagine a science without data and unable to articulate its cognitive claims! The absurdity of this is patent. Yet such is the absurdity—absurdity, that is, from a scientific point of view—in which philosophic mysticism culminates. For in all the variants of this philosophy cognition is represented to be cognition of a unity emptied of plurality and of a unity beyond or beneath utterance. The reiterated designation of mystic cognition as immediate and intuitive and ineffable marks

it off completely from cognition as function of inquiry; mystic cognition *par excellence* comes to fruition in a state of awareness in which there is no room for problems, for arguments, for proofs. Such awareness, which is not relative to a specifiable subject matter, not dependent on determinate evidence, not waxing or waning in accordance with changing conditions governing verification of hypotheses and discovery of things still unfathomed, such awareness inquiry can neither give nor take away.

Mystic cognition is thus intent upon attainment rather than search, and attainment regarded as absolute. It is but in a process of investigation that doubt could arise whether or not or how far some mode of cognition should be accepted as relatively secure in conformity with certain criteria for testing it: in the absence of such process uncertainty is hardly possible. For if absolute possession of truth constitutes the sole test of cognitive security, quest for a goal already reached becomes obsolete. True knowledge—and concerning this the mystics evince notable unanimity—signifies, to speak in the language of the schools, complete identity of subject and object. In abolishing the distinction between the knower and the known lies the supreme achievement of the mystic. And the achievement is certainly unique, whence the triumph over plurality and over the need of its generification whether in terms of systematic pluralism or monism. Mysticism is a doctrine according to which plurality disappears in a unity intrinsically undifferentiated and thus in a unity impervious to discursive thought.

Here is a philosophy embodying uncompromising affirmation of unity without plurality by a method dispensing with reasoned discourse. Unity alone remains, its correlative disappears. This is monism with a vengeance in defiance of the deliverances of sense and the demonstrations of thought. A cognitive mystery, as it were, constitutes the sole justification of such monism, the criteria invoked for its truth being totally at variance with those dominant in all investigative disciplines. No science or philosophy could solicit credibility by running counter to the injunctions of inquiry, to the injunction especially that it proceed from specifiable

data and thence forward to generic interpretation, so that the unity sought or established be a unity of a given or assumed plurality. The mysterious asseverations of the mystics, flying in the face of every prerequisite to knowledge by inquiry, may fascinate but are scarcely conducive to woo assent.

What should then be said of mysticism in the light of the thesis I have been maintaining, namely, that no philosophy can dispense with plurality as a basic category enjoying priority over its equally basic correlative? Should it be asserted that mysticism lies outside the realm of philosophy? Should it be held that mysticism, though a philosophy, is essentially eccentric, the exception, as it were, proving the rule? Or could it be asserted that mysticism, too, must depend on the inescapable priority of plurality for the very averment of its occult monism? Let me proceed to examine these issues in detail.

Much latitude in defining philosophy must be allowed for including mysticism within the definition. To be sure, no definition of anything can be wholly arbitrary unless we convert into a general principle Humpty Dumpty's claim to absolute autonomy in the use of words. "When *I* use a word," he says, "it means just what I choose it to mean—neither more nor less." Yet, removal of restraint on the exercise of definitional liberty can hardly be said to afford complete licence to utter nonsense. After all, etymology and usage do set limits on the freedom to define any subject, including the subject of philosophy.

How far may the meaning of philosophy be stretched to suffer mysticism to be subsumed under it? To this there can be no conclusive answer. For only within the context of philosophy itself does the question arise, and philosophers notoriously disagree as regards philosophic subject matter and philosophic method. Yet nothing, it would seem, either in the etymology of the word or its habitual employment, requires that the label of philosophy be withheld from mysticism. Mysticism is certainly not inimical to wisdom nor is it a stranger to issues traditionally earmarked as speculative. But it is exactly over the nature of wisdom and the

import of speculation that a consensus is still wanting and is still wanted. And as long as philosophy is open to definition in vagueness, mysticism must of course be included in it. Vagueness aside, however, such defining terms as wisdom or vision, a way of life or attitude of mind, have little relevance to philosophy viewed in its cognitive as distinguished from its non-cognitive aspect. Indeed, no definition could lay claim to adequacy by omitting reference to the non-cognitive interests forming the content of philosophy. And precisely to these interests, such, for example, as are represented by religion and art, mysticism is bound by ties of deep affinity. Accordingly, whenever non-cognitive matters become philosophically focal, the bearing of mysticism on them must ever be taken into full account. In the final reckoning, it is perhaps chiefly in connection with issues in valuation that mysticism deserves to be embraced within a catholic conception of philosophy.

How significant, however, is mysticism when stress is laid on the cognitive side of philosophy? Here everything hinges on the view that philosophic knowledge, and knowledge especially of non-reflexive subject matter, meta-scientific though it be, is not discontinuous with scientific. And even as regards reflexive subject matter, philosophic knowledge, which is indeed extra-scientific, requires for its possibility dependence on conditions and principles of inquiry. That knowledge, as Dewey holds, must be defined "in terms of inquiry, not *vice-versa,* both in particular and universally,"[1] may or may not be a defensible thesis. It is a matter of debate, and while I believe the thesis to be valid, its universal applicability is here not the issue. But that the thesis is true "in particular," in relation, that is, to scientific knowledge, can scarcely be doubted. How define such knowledge independently of all the investigative processes of which it is the outcome? And if we regard philosophic knowledge too as following upon modes of inquiry, different though they be from those called "scientific," the cognitive claims of mysticism, speaking mildly,

[1] *Logic: The Theory of Inquiry,* Henry Holt and Co., New York, 1938, p. 21.

cannot be said to hold water. For these claims, being intuitive and ineffable, are not only alien to reflective inquiry but, which is more important, alienated by it. They are claims the nature of which cannot escape becoming invalidated by acts of reflection.

Now the intuitive aspect of mysticism would seem less baffling than the ineffable. For intuitive or immediate apprehension is not a mystic monopoly. Shorn of its mysteriousness and considered a function in inquiry rather than an independent organ or faculty, intuition represents an episodic experience in all cognition, scientific as well as meta-scientific, and one susceptive of abstraction by the analytic intellect. *Within* the complex and continuous work of inquiry some form of direct apprehension certainly plays ancillary and often decisive roles. This is a subject, open to study from different points of view, which can here not be broached. At all events, intuition without its mystic halo is a tenable mode of cognition; the gulf that divides mystic from other philosophic doctrines is thus not unbridgeable, seeing that intuition may be affirmed to have a functional place in what Dewey calls a "continuum of inquiry." It is therefore not the intuitive as much as the ineffable aspect of mysticism that prevents incorporation of mysticism within philosophy however generous the definition.

The knowledge for which mystics claim truth is not simply intuitive, the outcome of inquiry instituted and pursued by non-intuitive ways, it is exclusive and esoteric and inexpressible and incommunicable. In this lies its specious invulnerability: for what cannot be said obviously cannot be gainsaid. Yet, how could non-mystics ever become cognizant of the mystic's claims if we assume his ineffable knowledge to remain shrouded in complete silence? Silent mysticism is indeed irrefutable—not because it is mysticism but because it is silent. There is of course silence and silence. If all mystic experience is speechless, does it follow that all dumb experience is mystic? For all we know, the world may be full of mute and inglorious Miltons as well as of St. Johns of the Cross. Not taciturnity as such can accordingly be said to

constitute the essence of mysticism but only *whereof* speech is precluded.

And so, to reveal their mysticism, the mystics *must* talk, voicing by inuendo and through ways plainly contradictory that which may not receive logical formulation. It is the logic of mysticism, if I may say so, which requires its special idiom to be logically awry. Hence the attempt to describe the indescribable in terms mutually repugnant, in metaphors ever at loggerheads, in concepts strikingly incongruous. Mystic discourse is designedly discourse to discredit discourse. Such intentional discredit is assumed to redound to the benefit of ineffable experience. And Bergson may not inappropriately be mentioned in this connection although his philosophy is too complex to be identified with mysticism. Yet his view of intuition as opposed to analysis and as enjoying cognitive supremacy is in essence and spirit of the mystic kind. What could be more purely mystic than his definition of metaphysics, the discipline concerned with "absolute" reality, as "the science which claims to dispense with symbols"?[2] How peculiar a "science" that can withdraw its content from all symbolic representation or expression! The argument, if argument it be, is the negative one of perennial mysticism: intuition cannot be conveyed through the ambagious vehicles of discourse; seen from within, all symbolic translation of intuition is a relinquishment and falsification of it. And once this argument is adduced, and adduced with the aid of deceptive discourse, the rest is silence.

In the light of such considerations, the inclusion of mysticism within a general definition of philosophy would seem repellent to mystics and non-mystics alike. How could knowledge ineffably one with its object have anything in common with knowledge hinging on elaborative inquiry? What comprehensive definition could possibly accommodate these opposites? Moreover, the mystics reiterate that knowledge other than theirs is a snare and a delusion, an incorrigible perversion of the real, so much so that all science and all philosophy, concerned as they are with reasoned

[2] *An Introduction to Metaphysics,* translated by T. G. Hulme, G. P. Putnam's Sons, New York and London, 1912, p. 9.

generifications of the diverse by specifiable modes of study, must be not simply transcended but altogether and uncompromisingly negated. For the mystics, to invert a famous dictum of Hegel's, the real is the irrational and the irrational the real, the word "irrational" serving to characterize both the real intuited and the intuition thereof. Since discursive thought demands distinctions which in mysticism mysteriously coalesce, discursive thought, being the very antithesis of intuitive insight, must thus be ruthlessly condemned as leading to complete estrangement from the inward heart of things. Repudiation of thought and all its work constitutes the *via negativa* the mystics must tread before the saving intuition can supervene. In entire reflective forgetfulness and in utter logical nakedness must mystics enter the stillness of their Nirvana. It is this negativism *vis-à-vis* the cognitive achievements of laborious thought which renders abortive any attempt to find common ground between mysticism and philosophy.

It might in passing not be amiss to mention Hegelian negativism in contrast with mystic. For dialectic, too, involves a *via negativa,* and, according to Hegel, no other can be followed by constructive thought. The chain of conceptions or concepts generated by the dialectical method owes its concatenation and hierarchy to the principle Hegel himself named *Negativitaet.* This principle is at work in precipitating the tensions and conflicts latent in all ideas and beliefs when asserted as monadic and at work as well in "sublating" them in higher forms. It is the assumption of the dialectic that only the whole is wholly true; consequently, the claim to truth for anything monadic, in the Leibnizian sense of the term, is foredoomed to failure. Yet the claim *must* be made if the failure is to be demonstrated. And the demonstration consists in showing that everything particular inevitably appearing at first as self-sufficient and self-consistent must in the end inevitably pass into its very opposite. What everything particular thus inherently suffers from is the fate of being both itself and not itself; or, to quote Hegel's own drastic phrase, *"alle Dinge sind an sich selbst widersprechend."*

But the negative way, leading to successive sublations of opposed persuasions and categories into ever higher or truer forms, is, strange to say, the only positive way at the command of the dialectic. For in becoming negated, isolated particulars lose nothing but assertability of their isolation; this very negation, however, serves to vindicate their interdependence and organic relation in the total context of truth. Thus fertile is the negativism on which depends the progressive movement of the dialectic whether of persuasions as in the *Phenomenology* or of categories as in the *Logic.*

The sterility of mystic negativism is patent: it is negativism carried to the extreme of nihilism. The antinomies of reason, instead of being construed as steps on a Jacob's ladder ascending to a holistic comprehension of things in which all the varieties of human experience and endeavor find justification, are solved in mysticism by dissolving them into nothing. Thoughts as such, whether antithetical or not, if to steps they be likened, can but descend into a hopeless spiritual quagmire. Over reason's portals the mystics might not unfittingly inscribe, "All hope abandon ye who enter here."

This complete nihilism touching the cognitive claims other than mystic aggravates the dilemma with respect to the philosophic status of mysticism. The dilemma is this: mysticism is either the very antithesis of philosophy or else the only true philosophy. And the dilemma has equal relevance whether we take the mystic or the non-mystic point of view.

If, regardless of the content of its teaching, philosophy requires to be expressed in effable form subject to the law of contradiction, then the mystics themselves would decline the honor of the name, since the doctrine they avow calls for radical disavowal of discursive thought. On the other hand, the mystics might well claim exclusive right to the name if cognitive intimacy with the intrinsic nature of being constitutes the ultimate goal of philosophy. For what can rival in intimacy an experience whose relation to its object is that of absolute identity? Such identity serving as sole

measure of intimacy, is it any wonder that every philosophy contrasted with their own should appear to the mystics as pseudo-philosophy? What more singularly false than bifurcation between reality ever retreating and knowledge never at rest?

By non-mystics, however, the picture must be reversed, contending as they do that philosophy is preëminently a product of thought having no probative force except in terms of consistent discourse about a subject matter, whether reflexive or non-reflexive, present in definitive or exemplary data. This contention automatically debars mysticism from the realm of philosophy: its alleged cognition defies utterance, and when expressed, passes understanding. Flying in the face of reasoned discourse in abandoning all distinctions and all relations, mysticism becomes inseparable from nonsense—nonsense, that is, when its language is judged in accordance with thought's logical imperative of non-contradiction. And though mystics notoriously glorify such nonsense, the glorification sets it in conscious opposition to any and every philosophy based on faith in reason.

The issue is clear. And let it not be said that the issue is but semantic remediable by definitional fiat. For at stake here is the thesis concerning the cognitive claims of philosophy as cognate and continuous with those of science. The generality of the thesis would be in serious jeopardy were mysticism (or any other doctrine avowedly irrational or anti-rational) recognized as a true species of philosophy commensurate with any other. How can philosophy generically be spoken of as akin to science on the assumption that mysticism is a genuine species of it? Scientific cognition is integral with and relative to multiplex processes of inquiry; if the cognition vouched for by a certain discipline dispensing with these processes may lay claim to being both infallible and ineffable, the contrast with scientific cognition could scarce be greater. To call such cognition "philosophic" is to use the adjective completely at variance with its application to cognitive endeavors analogous to scientific.

Exclusion of mysticism from philosophy, as thus far urged, can, however, not be said to follow without qualification. It fol-

lows, indeed, and follows ineluctably, if the differentia of mysticism is identified solely with the intuitional claim. On the assumption that between reason and philosophy the relation is symmetrical, so that nothing could enter the latter's domain unless it be expressly reasoned about in conformity with the principle of contradiction, the intuition of the mystic, not being ideational and utterable, belongs rather to the sphere of the subliminal or the suprarational. And this intuition, the summit and journey's end of the mystic "discipline," in the ambivalent sense of the term, leaves behind, in the achievement of union with reality, all the anxious cogitations it follows upon. Now if we consider the differentia of mysticism to comprise not only the supervening intuition but also that upon which the intuition supervenes—namely, the phase of intellectual disquietude and doubt —a much broader view of the subject becomes possible and its inclusion within philosophy not implausible. But what becomes includible is rather the mystic's *via negativa* than the positive attainment of his cognitional goal. Not the mysterious solution of the problems the mystic is wrestling with but the problems themselves are typically and perennially matters of discursive thought.

Such problems as those of multiplicity and unity, difference and identity, appearance and reality, illusion and truth—are they not the philosopher's very own? Well, they are ever the mystic's also. His consummatory awareness with nothing beyond to be aware of, though safe from all distinctions, does nevertheless, when he chooses to speak of it, comport with but one of the distinguishable correlatives to the total exclusion of the other. Of the mystic it can appropriately be asserted that he is a philosopher *malgré lui* but only in the pre-ecstatic or speculative phase of his mysticism. For prior to the speechless transport of his vision, he is, as Josiah Royce remarks, "a very abstract person . . . usually a keen thinker . . . and a merciless dialectician."[3]

[3] *The World and the Individual,* The Macmillan Company, New York, 1912, Vol. I, p. 81. Pertinent is this observation: "Now the essence of [the] view of the mystic is that to be real means to be felt as the absolute goal and consequent quietus of all thinking . . . Or in other words, Reality is that which you immediately feel when, thought satisfied, you cease to think." *Ibid.,* p. 83.

This qualified recognition of mysticism as a philosophy, aberrant though it be, requires that stress be laid on ancillary speculations conditioning their ultimate cessation in ineffable union with reality. In some of its versions mysticism is indistinguishable from recurrent scepticism in reiterative insistence on the illusions of sense and the paradoxes of thought. But its scepticism is factitious, one made to order, as it were, for the purpose of overcoming it at a post-rational level. Whereas traditional scepticism either leads to an impasse (as in agnosticism) or carries with it its own corrective (as in many forms of rationalism), mystic scepticism serves to provide reasons for silencing once and for all the claims of reason. It is a scepticism not unlike the Cartesian in forming the initial phase of a method. But what a difference in motive! The nisus of Cartesian doubt is to restore faith in reason: mystic doubt has for its aim irreparably to destroy such faith. If "to doubt is to think," a Cartesian axiom from which the mystic would not dissent, "to think is to doubt" may be said to constitute the mystic's non-Cartesian counter-axiom. The very act of thinking must, according to him, generate everlasting doubt, the thinking process being inevitably restless and circuitous, related to objects remote and elusive. Consider the anomaly of unceasing multiplication by thought of disputative issues thought is powerless to solve. For the kind of solution the mystic is intent upon doubt of thought as source of certainty becomes a basic dogma. The sceptic, if one may say so, is father of the mystic or, to vary the phraseology, the mystic is sceptic deceased. Thus mutually implicative are scepticism and mysticism.

It is only the speculative side of mysticism, in the sense here adumbrated, that can be said to have philosophic affiliations, the non-speculative aspect, that relating to an ineffable experience that quenches all speculation, is, as the saying goes, a horse of another color.

It will of course be objected and quite rightly that mysticism divorced from its mysterious consummation is like the familiar separation of Hamlet from the Prince of Denmark. This is simply

a way of saying that mysticism involves reasons which reason does not know, being in its total meaning both something less and something more than philosophy. Granted. But the nature of mysticism as a whole is not what I have intended or pretended to explore. My interest in the subject is limited, being but incidental to the principal theme treated in the preceding pages.

I have *(inter alia)* argued that philosophic cognition, like scientific, is the outcome of reasoned inquiry conveyed through the medium of discourse subject to the principle of contradiction; and I have argued also that all cognitive investigation, philosophic as well as scientific, must pre-suppose as incontrovertible the priority of the category of plurality. To the arguments for the supremacy of the principle of contradiction and of the category of plurality mysticism represents a formidable challenge. This must be met if the arguments advanced are not to suffer loss of generality.

One way of meeting the challenge is by the method of exclusion: no definition of philosophy can accommodate mysticism identified solely with a supposititious cognitional state reduced to absolute silence. Between articulate and mute cognition comparison is impossible. A description of philosophy as occult seems a contradiction in terms.

The method of inclusion can deal with the challenge in a more generous manner. Mysticism does belong to philosophy if not construed as depending for its meaning simply on an unutterable vision completely unrelated to the discipline of which such vision is the culmination. Mysticism as a discipline—and I am using the word in its theoretical sense—is mysticism in the making: the final and climactic phase has its *raison d'être* in prior conditions. The justification of a mode of awareness in defiance of all reason is alleged to lie in reason's inveterate impotence to afford certainty beyond a peradventure. Reasoned scepticism as foundation of something other than reason, whether of faith or feeling or volition, is a phenomenon of considerable rampancy; the mystic way of exemplifying such scepticism, esoteric though it appear, is not out of harmony with philosophic practice.

Scepticism thus constitutes the prior phase of the mystic's dis-

cipline. Although at its apex he claims to be possessed of absolute certainty, what he must perforce begin with or start from is absolute doubt. The passage from doubt to certainty is quite in keeping with philosophic tradition. Of the various expressions of such passage, the mystic's is indeed the most extreme, so much so that it may rightly be deemed exceptional or eccentric. Nevertheless, the process of thinking involved in the transit to the mystic goal, far from disproving the universal rule that philosophy is a rational undertaking, might well be looked upon as the mystic's indirect confirmation of it.

If we do not confuse mystic escape from reason with mystic attack upon reason, the attack with reason's weapons conditioning the escape, assimilation of mysticism to philosophy becomes quite feasible. When detached from its recondite foreground, the dialectical background alone being singled out for attention, mysticism appears as one of the varieties of sceptical thought and can as such not be said to militate against the thesis that to reflective discourse free from contradiction must be accorded paramountcy in the enterprise definable as philosophic.

The argument for the priority of rational discourse has its counterpart in the argument for the priority of the notion of plurality. Although the claim for plurality implicitly constitutes the major topic of the present chapter, it is not necessary to expatiate at length on its relation to mysticism. For involved in mystic scepticism is the need for the experience of multiplicity prior to its ultimate disappearance in the bosom of the Absolute or in the abyss of Nirvana or in *die stille Wüste der Gottheit.* Diversity must be impugned before it can be expunged. Here, too, as in the case of thought, attack is the prerequisite of the escape. Withdrawal into undifferentiated unity requires the same propaedeutic as withdrawal into ineffable immediacy. Beatific freedom from felt division and distinction must in the mystic's pilgrimage precede his final ecstatic union with the nameless One.

Were one to graft upon mysticism a technical vocabulary borrowed from the schools, one might not illegitimately distinguish

its monistic ontology from its intuitional epistemology. To be sure, the distinction has no bearing upon the ultimate phase of the mystic discipline; vision of the One obliterates any and every distinction. But prior to it is the phase of sceptical speculation. And here distinctions are both relevant and indispensable. How else could doubt assail them? How else, for example, could the reality sought be opposed to appearances everywhere impinging or the immediacy anticipated contrasted with dialectic always laborious? Mystic speculation is under compulsion to condemn as specious thought's injunctions until they can be forgotten in mystic intuition. And the exigencies of plurality must be equally repudiated as condition precedent to the vision of pure unity. The mystic as sceptic cannot help being preoccupied with what he cannot help assuming as null and void. He is thus ever polemically engulfed in the currents of supposed untruth in anticipation of an awareness which dialectic may intimate but which can only be enjoyed on a plane beyond thought and speech.

The term monism as applied to mysticism is in one sense an obvious misnomer for the tautological reason that the deliverance of an awareness beyond thought and speech must perforce remain nameless. The distinction between awareness and its deliverances is incompatible with a goal impervious to differentiation. With the attainment of his goal the mystic vanishes in impenetrable stillness. As Royce remarks, "the mystic abode of Being is the silent land. They come not back who wander thither."[4]

There are, however, two ways of attaining the goal—an "actual" and a "prophetic."[5] Of attainment envisaged as actual, the culmination of the mystic quest, nothing indeed could be conveyed through the medium of discourse. "Nothing" seems the category most apposite to mystic achievement—nothing, that is, words could tell. Quite otherwise is attainment words can *fore*tell, that adumbrated in the speculative phase of the mystic discipline.

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[4] *op. cit.*, p. 148.

[5] The expressions "actual attainment" and "prophetic attainment," used in a different context and with a different purport, occur in Charles A. Bennet's stimulating essay, *A Philosophical Study of Mysticism,* Yale University Press, New Haven, 1923, p. 78.

Sceptical disavowal of reason would be of no avail unless inspired by the promise of indubitable certainty supervening upon cessation of thought. The justification of mystic scepticism lies in nothing else than the prophecy that systematic withdrawal from ideation and intellection will be rewarded by the presence of pure being in an immediate and ineffable vision. Only in the light of such prophecy can the mystic impugn as illusory the reports of sense and the processes of thought. Of prophetic attainment much can thus be said which actual attainment entirely prohibits.

How, for instance, could the mystic goal be spoken of as ineffable *before* reaching it? This is but prophecy warranted on no other grounds than dialectical. If intimate union with reality is the chief desideratum—a union supposed impossible of consummation by means of sense and thought—an awareness in absolute contrast with the generally accredited modes of cognition must of course be postulated as the only conceivable alternative. And of such awareness certain features are quite predictable albeit mainly in negative terms: here determination is by way of negation. The awareness in question will be totally unlike ordinary perceptions and conceptions: completely fusing with its object, the awareness will not be tangential or volitant, oblique or symbolic, distant or but approximate. If identification of mystic awareness as intuitive involves the use of a positive predicate, the predicate is one clearly inapplicable to discursive processes in relation to *their* objects. And is not an awareness described as intuitive ultimately the same as describing it as ineffable?

As a speculative discipline mysticism has an epistemology not lacking in articulateness. Not exempt, and this is scarcely odd, is the very consummation adjudged ineffable; it cannot be so adjudged except by contrast with effable experience mysticism must start with. Mystic theory of knowledge, founded upon stark opposites in circular relation, is needed for purposes of animadversion and prophecy. Disparagement of thought presupposes as standard a prefigured way of knowing not vitiated by

indirection and remoteness; and this awaited way is simply the inverse of the ratiocinative.

Circularity of the relation between opposites is the basis also of mystic ontology. For mysticism has or rather is an ontology no less articulate than its theory of knowledge. The unity of being upon which mysticism insists signifies the identity of being—an identity pure and simple—for which the unities vouched for by sense and thought provide the requisite contrast. Such unities, complex and definite, involve reference to distinguishable units of which they are presumably composed or into which they may be variously analyzed. None of the unities perceived or conceived—and they are plural—can intelligibly be said to exemplify an identity apart from or unrelated to difference. Multiplicity and variety, distinction and difference, are simply inexpungible from the objects of cognition and from cognition of the same, as cognition occurs in exoteric contexts, in those, that is, of common sense and science and philosophy. Monistic theories other than mystic are theories of assimilation and presuppose diverse contents subject to associative processes. As stated earlier, the rival of monism is not plurality but pluralism. Now the mystic's is not an assimilative but an annihilative monism: it is a monism that renders illusory the existence of all plurality however attested. What the mystic craves is not an identity resulting from a process of identification such that leaves undestroyed the material amenable to it: he longs for a unity completely purged of all multiplicity. And this unity though to thought it seem bare and barren appears to feeling as the deepest and richest reality.

Yet, this monism, the ontology of mystic speculation, requires for its content the very plurality marked for extinction. Pure unity as object of actual attainment, when coalescing with its ineffable intuition, means the end of speculation and thus of discourse. But as object of prophetic attainment, pure unity derives significance solely from dependence upon plurality. The One of mystic ontology, inexpressible as object of achieved vision, is far from nondescript as object of predicted vision. Here, too, determination can but proceed by means of negation. The One,

in advance of intuited union with it, is open to description by many predicates. Of the One it can safely be stated that it will appear as undifferentiated, undivided, unqualified, indeterminate, etc. Such predicates have, of course, their appropriate correlatives, and these must be brought into play for the purpose of *fore*-telling the object of the mystic vision. As prophet of what is to come—namely, a vision of the unity of being for which no analogue can be found in experience infested with plurality—the mystic must perforce appeal to ordinary experience to voice by contrast the promise of his prophecy. His monistic ontology so annihilative ultimately is under necessity to invest plurality with a prior status, for its final extrusion could not otherwise be enjoyed in anticipation. Discursive prophecy preceding the silent vision unweariedly proclaims that unless he first turn his back upon the Many, the mystic will never be able to face the One.

So far as mysticism comprises tenets beneath or beyond philosophy the reflective distinction *between* epistemology and ontology is certainly inapposite. *Within* mysticism, however, exhibited as a speculative discipline, between its theory of knowledge and its theory of being there is a great difference and a circular relation. No way of knowing save the intuitive is here conceivable *if* the only object to be truly known is the ineffable One; conversely, no mode of being except the monistic is possible *if* on mute intuition falls the burden of revealing the ultimately real. Thus circularly related are mystic epistemology and mystic ontology. The "circle" is not vicious and appears elsewhere: it is not uncommon to think of the real as the object of true knowledge and of true knowledge as knowledge of the real. But what is real and what is true? Mysticism has its own special answers and they are not philosophically negligible.

Circularity aside, what ultimately matters is the question of priority. Of the two concepts—reality and truth—which comes first? The question has of course no meaning if applied to the mystic goal: it is absurd to ask whether *in* the actual attainment of the goal the act of attaining does or does not precede the ob-

ject attained. All questions provoked by thought remain for the mystic forever stilled at his journey's end. At the level of prophetic attainment alone can the question of priority become relevant and crucial. For prophecy is discourse. And within its context mystic epistemology and mystic ontology are non-interchangeable and not at all co-equal.

It would take me too far afield and into needless detail to discuss the problem on its merits. I have no inclination even if I possessed the competence to touch on matters of interest chiefly in learned studies of mysticism. In its general features, however, the subject is not unfamiliar. I have used it merely for purposes of illustration and with the same freedom from exegetic responsibility I have allowed myself on former occasions in relation to other doctrines. I may of course have gone astray. Yet, without presuming to raise issues of ultimate interpretation, it is not too far-fetched, I think, to distinguish in the speculative or prophetic phase of mysticism between the emphasis on the search for true cognition and the emphasis on the search for pure being. Although interdependent and in their achievement identical, the search for the first may be spoken of as having mainly a "subjective" and that for the second an "objective" orientation.

The terms are conventional but here not unduly distortive. For it is one thing to enjoin upon the mind a way of "seeing" purged of the importunities of sense and the complexities of thought, it is quite another thing to lay stress on what will thus be "seen," the real as it is in itself, the real in its absolute and simple oneness. To accord priority to the purified vision over the reality visioned, the latter derivable from the former, is to evince concern for the soul's inward condition—for its regeneration, conversion, salvation, peace. This represents the introspective side of mysticism admittedly primary for so many of its devotees. Preoccupation with priority in the other direction, the mystic's monistic ontology determining the insight germane to it, implies an attitude more sacrificial or clearly less "psycho-centric": primary interest in "that which is," an interest fixed on a unity in which minds or souls or selves do not have but rather lose their being, since it is a unity

above and beyond all plurality, such an interest can hardly serve as basis for a "way of life" which mysticism has often been held to entail.

And yet, with all its negativism, mystic ontology would seem to be of greater importance than mystic epistemology. Not that the latter needs to be underestimated. Like every theory of knowledge the mystic's, too, has a reflexive subject matter. When considered in distinction from its ontology, the knowledge mysticism purports to afford is ultimately about knowledge itself. The mystic is ever self-conscious, self-critical, self-concerned. The subject of knowledge is central in all theories of knowledge, its centrality in mysticism being only more conspicuous. And even when absorption in pure being marks the end of subjective preoccupation, the beatific vision remains to bear witness to the subject's final victory. Never can the mystics liberate themselves from subjectivity so long as they are engrossed in the reflexive situation: the climax of their quests, whether spoken of as vision or insight or intuition, does not cease to be a state of mind, especially so if qualified as rapt or ardent or ecstatic. Such language is simply precluded in connection with mystic ontology. To draw but the filmiest line between vision and the visioned is to condemn to frustration the mystic's ambition to be one with the One. An inevitable distinction is involved in all knowledge, whatever form it may take; and what the mystic's vision discloses, assuming it be vision *of* anything, must remain distinct from the undivided unity he seeks. Mystic ontology thus constitutes a striking rebuke and refutation of mystic epistemology: complete absorption in pure being can mean nothing else than total loss of consciousness, for any awareness of it would pollute the mystic goal with the taint of an irreducible duality.

Whether in interpreting mysticism preference should be given to its preoccupation with insight or being will be governed by one's preference, in my idiom, for the reflexive or the non-reflexive content of a philosophy. Ultimately, it is a question of according supremacy to a subjective or non-subjective point of view. My own position predisposing me to think of theories of

being as reason's most princely gifts, I cannot but look upon mystic ontology as having for philosophy a major significance.

Of mystic unity a nature may be affirmed than which nothing more abstract would seem possible. For if spoken of as "pure," i.e., as barren of plurality, it is a unity absolutely unique. And the irony is this, that because such unity cannot qualify as object of predictive apprehension without the act of excluding plurality from its essence, what is excluded ineluctably enters into its meaning.

This is supplementary to the foregoing contention according to which actual attainment of pure unity by a vision absorbed in it seems so problematic as to be virtually precluded on the ground that such vision, allegedly a mode of awareness, involves a fatal duality, fatal, that is, to monistic purity. What I am here considering is the oneness of being presupposed for divinatory attainment: the mystics claim to be presentient of the unity they long to find. Here the distinction between presentiment and its object is manifestly inviolable, and of the object as *fore*seen absolutely nothing at all can be said except that multiplicity will not contaminate it. What mysticism thus entails is an inevitable duality relating to its prophecy and an inevitable reference to plurality as antithesis to the object prophesied.

Mystic monism may be epitomized by saying that it is a doctrine of the abstract universal, the universality as well as the abstractness pushed to the uttermost limit. And because it exemplifies with such inflexible pertinacity an ontology so universal and so abstract, nowhere expressed with comparable radicalness, mysticism must command philosophic attention.

In the present context, however, and in connection with the thesis I have been advancing, the attention mysticism merits concerns the indefeasible claim for plurality. It is a claim mystic ontology cannot but acknowledge. The abstract universal, which speculative mysticism vindicates, is indeed unutterable if and when directly unveiled in the promised intuition, all utterance being an engulfment in the divisive forms of thought. But viewed

as anticipatory, the mystic goal requires and receives discursive utterance. At the level of prophetic attainment, prior to the complete abdication of reason, the goal constitutes a unity unimaginable save as literally abstracted from the correlative logically linked with it. Unity declared to be pure is a unity dialectically related to plurality, and unless so related, it cannot serve as intimation of the promised land toward which the mystic aspires. Before consummation of the divined vision, mystic unity derives its entire meaning from the opposite it is the denial of, its alleged purity thus becoming explicitly nullified, since the allegation can hinge on nothing else than the abstractive process which operates to effect a verbal expulsion of plurality from unity.

The expulsion is of course only verbal and of dubious value. To be expellable the word plurality must have an antecedently intrinsic meaning which remains to plague the mystic until at last everything comes to signify nothing and nothing everything. Until he ceases to think, therefore, the mystic can neither forgo nor tolerate plurality; to renounce it is to render preclusive divination of a unity conceivable solely by contrast with plurality, and any acceptance of plurality militates against the conception of pure monism.

From the standpoint of mystic ontology the assault upon thought and the assault upon plurality may thus be seen as one in principle. The world of thought is the world of plurality *par excellence:* it is a world of distinctions and differences, classes and relations, concepts and forms, categories and laws; and the unity of being, the object of mystic presentiment, cannot be approached by thought without deadly effect on its monolithic status. That mystic being is closed to thought and that plurality is transcended in mystic being are equivalent expressions. Pure monism is both the nisus and the acme of mystic ambition.

But monistic purity, while the mystic is only aspiring toward it, what can it be if not an object of thought steeped in corruptive plurality? Not merely is plurality the initial term upon antithesis to which pure unity depends for its verbal definition, the superabundant deliverances of the senses as well as those of thought

constitute the pre-analytic data, as it were, of mystic scepticism. Not unlike any other, then, mystic monism has its roots in given and discernible diversity. Without the diverse to begin with, how could the mystic glorify in advance ultimate liberation from it?

The priority of plurality is a universal postulate: every philosophy must start from plurality and proceed to a theory of it. Mysticism is no exception. Although the monism it defends, the extremest conceivable, requires that plurality be finally jettisoned, no meaning whatever can be attached to such monism in independence of plurality. Far, then, from impugning plurality, mysticism, construed as a philosophy, is a signal vindication of its ineluctable claim.

Chapter XII

PLURALITY AND PLURALISM

I fear that I may have given an account of mysticism more elaborate perhaps than my purpose required. To some prejudiced reader the account will seem wasted on a subject so remote from the main business of rational thought. While to others no less biased it will look like a travesty of a theme too emotive for dialectical treatment. Many writers on mysticism appear to see no other choice before them save apology or caricature. Although I could hardly elect the former, I deliberately sought to avoid the latter. My attempt may nevertheless be viewed as distortive. To be sure, only the professed mystic could accuse me of having falsified his position on the ground that he alone is entitled to speak whereof nothing can be said. This, however, condemns to silence everyone alike. Non-mystic criticism is more serious: it may take the form of charging me with having made a needlessly involved excursus. Why, it will be asked, such a digressive discussion of something so elusive and scarcely more than tangential to the matters I have been concerned with?

The criticism would be justified if I failed to show the relevance of the mystic position to the notion of philosophy advanced throughout these pages. Mysticism cannot be readily dismissed except by dogmatic fiat: it is too deeply steeped in speculation. Besides, as already intimated, the speculative aspect of mysticism constitutes no grave challenge to the general thesis here defended. Far from being a digression, what I have said about this relatively neglected theme, neglected, that is, in "professional" quarters, becomes from my point of view charged with importance.

The importance is many-sided and I beg leave to clarify a few crucial considerations.

(a) Mysticism brings into sharp focus the ambivalence of interests accounting for the pliancy of philosophic definitions. Should philosophy be conceived as having to do chiefly with cognitive or non-cognitive matters? The question is controversial. Which interest should be excluded; assuming both includible, which should be accorded priority? Over this issue disagreements are profound and irreconcilable. For such a situation science offers no analogue. The business of science is principally to afford knowledge. Interests commonly subsumed under valuation as distinguished from cognition are of course open to scientific inquiry; and science, though ceasing to be science when ceasing to be cognitive, may nevertheless always serve as object of valuation. But the conception of a non-cognitive science, in the sense of having a function other than knowing, would seem to represent a contradiction in terms. And this is not simply a verbal problem. Imagine any science—astronomy, for example—concerned with anything else than inquiry into a certain domain of phenomena delimited by the appropriate pre-analytic data! A science may of course be used for non-scientific purposes but such use can hardly be said to define the nature of the field preëmpted for impartial study.

(b) Unlike science, philosophy cannot be indifferent to non-cognitive interests. The very distinction and relation between the cognitive and the non-cognitive fall within its purview. And it is no secret that the distinction as well as the relation will be conceived differently in accordance with the basic differences of philosophic positions. But let the cognitive and the non-cognitive appear ever so fused, no philosophy adjudged not unworthy of the name can be charged with their confusion. And mysticism is singularly instructive in showing that the very identity of cognition and valuation it culminates in presupposes an initially radical demarcation between them.

(c) Prior to disappearance into an ineffable unity of all distinctions and relations, the difference between mysticism as theory and mysticism as practice remains irreducible. The theory of knowledge and of being, involving speculative discourse, is one thing, inculcation of a way of life in the light of such theory is

quite another. The word "discipline," happily not unambiguous, fits equally the cultivation of the mystic's noëtic ambition and the pursuit of his course of conduct in conformity with it. But his strictly ideational aspiration is primary, forming as it does the basis of his moral code and his emotional bias. There can obviously be no applied tenets without antecedently given tenets capable of application. The priority of mystic theory over mystic practice is thus indefeasible.

(d) If mysticism is treated as philosophy, its doctrines must inevitably precede, as do those of every philosophy, their putative applicability. If so treated, however, the alleged ineffability becomes vexatious. What can be the meaning of a mute philosophy? What is the ground for the strange contention that the only true theory is one condemned to say nothing? This brands all non-mystics, who are certainly not noted for taciturnity, as pseudo-philosophers. The burden of proof is of course on the mystic. And the proof generally advanced takes the form of an appeal to an ecstatic vision whose attainment is believed to supervene only upon cessation of thought. Granting the validity of the belief, granting, that is, that intuitive possession of the real transcends discursive thought, what distinguishes mysticism as philosophy? Surely, not to the intuitive possession as such can the name be affixed: what entitles mysticism to be regarded as philosophy is its doctrine concerning true knowledge of the nature of being; in other words, its epistemology and ontology.

(e) Mysticism qualified as speculative is thus far from ineffable: the unutterable intuition of undifferentiated being is the apex of an elaborate discipline prefigured in discourse. Impelled by a predicted goal, mystic speculation is called upon to preconceive and to foretell what it declares to be beyond every possible thought and expression. In the contrast between prophetic and actual attainment of his experience lies the crux of the mystic's philosophy: the end as but *anticipated,* which conditions mystic scepticism and mystic dogmatism, hinges on a dialectical procedure; the end supposedly *achieved,* defying the power of dialectic to fathom, mysteriously coalesces with its ineffable intuition.

(f) Mystic epistemology has its roots in dialectic and not in experience. Not with intuition does mysticism begin; it ends in intuition after a prescribed noëtic cathartic. Viewed speculatively rather than practically, the cathartic consists of complete doubt of all the deliverances of sense and of thought. This absolute scepticism, part and parcel of the mystic's discipline, is requisite for the contrast with his intuitional dogmatism. This is a dogmatism whose expression cannot be other than negative. The intuition when it comes will indeed preclude speech; in advance of its occurrence, however, it can be foretold as being the very opposite of perceptual and conceptual awareness: it will not be indirect and divisive. That much is absolutely certain. In his quest and defense of it, the mystic's intuition can only be the outcome of a dialectical prophecy, one that can never relinquish the operations of thought needed for asserting what intuition is not. On the speculative level, then, the predicted intuition of the real, unutterable when actually enjoyed, is amenable to discursive statement in dialectical terms, in terms serving merely to indicate its antithesis to every other supposititious mode of knowing.

(g) Mystic ontology, too, has its source in dialectic. And here again between promise and fulfillment the distinction is momentous. Of the real attained by an actual intuition no ontology is of course possible: total absorption in being silences every theory of it. The mystic's aspiration is to pass beyond the goading chicanery of restless thought by losing himself in the bosom of the One. But the real as object of a prophetic intuition, and as such alone can it be envisaged at the speculative level of the mystic's discipline, lends itself decidedly to an articulate ontology. The cathartic operative in mystic epistemology is at work also in mystic ontology, the accent falling on the real visioned rather than the vision thereof. From the notion of the real must be expelled all that which pertains to it as object of non-intuitive experience: remoteness, strangeness, variety. And the expulsion is deliberate and discursive. The ontology is thus as negative as the epistemology: the requisite categories are borrowed from alien sources for the purpose of turning them into their polar opposites.

The sole conception which the real admits is through inversion of the way it appears to common understanding. Nothing indeed can be said of the mystic's pre-intuited real except that it is without substance and without form, neither in time nor in space, void of qualities and relations. Pure being is what the mystic seeks to become engulfed in, and pure being is being in its absolute and unfathomable unity.

(h) Unity purged of plurality—this epitomizes what the mystic is ultimately intent upon. His contention that reason necessarily breeds scepticism has plausibility only on the assumption that reason itself can provide no correctives for its quandaries and anomalies and antinomies. Thought's subtleties thus become a snare and delusion for a mind craving intimate union with reality. Such union nothing of course can bring about save an immediate awareness touched with rapture. Ecstatic vision of reality and the reality thus visioned must become one and indivisible, the mystic's measure of intimacy being pure identity. But what is identity *an und für sich?* An abysmal mystery at the post-speculative level of mysticism, in prior conception it is but a product of dialectical reason. How conceive of identity if not as the antithesis of difference? How think of unity without plurality, without thinking of the plurality unity is without? The correlative of unity is here the operative term, serving as it does to intimate in the only way open to discourse the nature of the mystic's ultimate desideratum. Speculative mysticism, employing as it must the medium of discourse, is accordingly able to foretell with complete assurance, not indeed what the unity sought will *be,* for that is beyond the power of speech to reveal, but only what it will *not* be. In this negative prophecy lies the philosophic importance of mysticism: it is the opposite of unity which in the pre-intuitive phase of mystic discipline comes to enjoy inalienable supremacy. Plurality is ever the mystic's *bête noire;* its compulsive presence can never be gainsaid; it owes priority to the dialectical need for an inverted image of the real; and until the final vision supervenes, it is not unity but plurality in which the mystic remains inevitably engrossed.

I have dwelt on mysticism at such length in order to invoke a sort of devil's advocate for the claims of plurality. Subordinating what in mysticism is ineffable to that which is speculative, we find the problem of plurality to be the mystic's principal problem. Mysticism is a philosophy which, though disposing of plurality by prophesying its ultimate abolition, must begin by acknowledging it as real enough to serve as object of continual doubt and disvaluation. Clearly, no greater proof of its universality could be furnished.

When we take seriously the mystic's prophecy of a unity void of plurality, we have a striking example of a not uncommon fallacy. It is a notorious tendency in philosophy to endow with preeminence one of a pair of correlatives and to curtail or annul the significance of the other. Not a few thinkers, for instance, have maintained that all things are to be adjudged good or mental or mutable, the opposite of each predicate disappearing altogether or surviving as part or species of the one accorded supremacy. Experience and reason, too, and in various ways, have been construed as reducible to each other, so that all cognition qualified as empirical must be enlarged to assimilate the rational; or all cognition deemed rational must be extended to include the empirical as the rational in disguise. This is an old story. Mysticism, in conceiving of unity without plurality, is simply rehearsing it in its own esoteric fashion.

This fallacy, to give it a name, I am in the habit of calling the fallacy of the suppressed correlative. Suppression is of course susceptible of degrees, ranging all the way from mere attenuation to complete negation. In mysticism the one correlative is so overweening that the other finally vanishes. Here the suppressed correlative becomes the eliminated correlative.

Viewed differently, the mystic's is the fallacy of turning a relative into an absolute. His monism involves unconditional adherence to one concept to the total exclusion of its opposite, reality being conceived as possessing ultimately but one attribute, so to speak, the attribute of oneness, and literally nothing else.

From this paradox no escape is possible when mystic ontology is conveyed through the medium of discourse.

But the fallacy of the eliminated correlative, implying unconditional acceptance of the prerogative term, vitiates likewise the supposititious claim for absolute pluralism. By such pluralism I understand a sort of inverted mysticism; what is here suppressed is the concept of unity, irreducible multiplicity becoming the basic attribute alleged to pertain to the real nature of things.

Unlike mystic monism, however, its polar opposite seems more firmly grounded in experience and is not necessarily inimical to thought. Pluralism profits immeasurably from possible confusion with plurality, and until the confusion is disentangled the fallacy of the suppressed correlative may easily remain undetected.

Plurality, as already shown, being so fundamental, its ubiquity attested alike by observation and discourse, it is not unnatural or implausible to contend that in pluralism alone may the claim for plurality find adequate justification. But the contention that the plurality defended by pluralism is absolute, in the sense of being independent of its correlative, can hardly be regarded as tenable.

The phonetic association with plurality confers upon pluralism a decided advantage: that pluralism signifies an affirmation of plurality would seem to have the persuasive force of a tautology. What else indeed could pluralism be concerned with? But it is no less though not so obviously true that every philosophy involves recognition of plurality; even mysticism, alleged to discard plurality in favor of unity, is no exception. Mysticism, as we have seen, must begin, as does any philosophy, with things present to sense and thought, and present in all their apparently irreducible diversity. If mere acknowledgment of plurality constituted the essence of pluralism, alternatives to pluralism would be but species of it, there being no philosophy without a complex subject matter amenable to diverse procedures. It is plain that pluralism has no monopoly of plurality.

Plurality, though the concern of every philosophy, is open to plural interpretations, pluralism being but one philosophy among many. And it can qualify as such only if as product of discursive

thought it (a) accords with the principle of contradiction and (b) eschews the fallacy of the suppressed correlative. This is a fallacy which no doctrine can avoid if it fails to retain, in the terms comporting with its basic position, the distinction and relation between unity and plurality, the import of all philosophic thought being, as I have argued, explicitly generic. Pluralism is thus no mere acquiescence in found or given pluralities but a deliberate generification of the same. Plurality without unity (to echo Kant) is blind, unity without plurality is empty.

But we may go further still. Strictly speaking, no meaning can be attached to plurality unless thought of as complex; its conception is that of an assemblage of units held together by some relation or other however fortuitous or external. "Plural" and "aggregate" are undeniably cognate if not equivalent expressions. The very term of plurality thus implies its correlative, plurality as such being no more intelligible than unity as such. The distinction between monism and pluralism can be construed as involving an absolute separation between "the One and the Many" only by withdrawing the distinction from the realm of discourse. For such separation lies beyond the power of speech to express. Pure plurality thus turns out to be as ineffable as pure unity.

Theories of monism presuppose plurality as much as do those of pluralism, and pluralistic theories, no less than monistic, assume that plurality is unifiable. Over what then do pluralism and monism differ? What is the basic issue that divides them? The issue has to do, I believe, largely with the kind of relations plural units should be thought of as possessing, since their unification hinges on the ascription to them of some relational structure. Or, to state the matter in the reverse order, the issue concerns the type of unification to which plural units are amenable, their relations being determined by the schemes designed to unify them.

All this may strike the reader as too abstract or too verbal. The play upon the words plurality and pluralism might be regarded

as particularly open to objection. I wonder, however, if the situation here considered could be made to appear in a different light by recourse to a different vocabulary. Would the issue lose material relevance if for plurality we substituted some of its synonyms? No term denoting that the world is full of a number of things, be it multiplicity or diversity or variety, can be preempted for pluralism, the same term being equally appropriate for monism. Every philosophy, it will be conceded, draws sustenance from the complex world. But the statement that in viewing a subject matter as plural is not the same as viewing it as pluralistic contains the issue in a nutshell.

But I must not allow myself to be lured into fields not strictly germane to my main task. With the problems providing pabulum for logical or semantic theories I am here not concerned. What in these pages I desire chiefly to dwell upon is the generic function of philosophy as it appears or might appear in different forms and different idioms. It is in connection with this function that the distinction between monistic and pluralistic views becomes relevant and important.

As regards reflexive subject matter—the subject matter, for example, of theories of knowledge—the issue of pluralism *versus* monism is discernible under various guises. The knowledge of which epistemology purports to be the generification is admittedly multiplex. There are diverse modes of knowing and any theory of knowledge, though it may end by reducing or assimilating them, must begin with their given and denotable diversity. The preëmptive subject matter of a cognitive discipline, epistemology not excepted, presupposes pre-analytic data definitive or exemplary of it. Every epistemology thus depends upon a plurality of such data: knowledge about knowledge would of course be impossible without specific states or processes antecedently given for generification whether limited or extensive. A theory of perception, for instance, does it not purport to afford a generic view of the countless varieties of perceptual experience, visual and auditory and other? And of a theory of judgment, too, this holds, its pre-analytic data being many and complex acts, exercised in various ways, under

different conditions, in relation to numberless objects. The theory of any mode of knowing is necessarily a generification of it. But what of the relations between separate modes of knowing open to separate generifications? Should they be conceived as external or internal? Or, phrasing the issue germane to the present context, do distinct modes of knowing lend themselves to pluralistic or monistic interpretations?

What precisely could be meant by a pluralistic epistemology? Obviously not mere recognition of plural ways of knowing. This no epistemology can eschew. Pluralism represents a generic theory of plurality, involving, as noted earlier, the use of notions and principles characteristic of a monadology. A monadology of ways of knowing would be tantamount to a theory of their equal uniqueness and equal independence, none derivable from or reducible to the others, each an exclusive perspective of things. Perceiving and thinking, to choose for illustration these modes of knowing, are not species of one another: they seem distinct in nature and incapable of exchanging their functions. Perceptions follow on external and sensible objects inducing them; thoughts need not be prompted by such objects. Resting on different conditions, perceptions and thoughts exemplify processes virtually autonomous, in the sense of proceeding without being subject to assimilation to or control by one another. And this would seem to hold likewise of their appropriate objects: things open to perception and things open to thought, though not mutually exclusive, since the perceptible may become thinkable content and the thinkable perceptually given, can nevertheless not be made to coincide. In principle, the perceptible and the imperceptible remain essentially differentiable. And a pluralistic theory may assign the same monadic nature and singular status to any other distinct way of knowing as well as to its corresponding domain of relevance.

A pluralistic epistemology could not be rendered tenable except on the view that every distinct way of knowing is amenable to a separate theory. A theory of perception, though generic in scope, covering as it must the entire field of perceptual experience, is

basically a theory of but one segregated type of cognition. The segregation is none the less apparent even though non-perceptual elements, such as those of believing or judging, should prove upon analysis to be inexpungible from the act of perceiving. For such elements, if analytically derivable from perception, would but appear among its proper constituents, no theory regarding the intrinsic nature of these elements being involved in mere discernment of their presence in perceptual apprehension. A theory of perception is thus a generification of the specific manifestations of a separate cognitive perspective, be the theory ever so generous in incorporating within its texture non-perceptual ingredients. A theory of belief or judgment or induction, which is likewise generic, exemplifies the same kind of segregation: what it is a theory *of* represents a form or process of cognition assumed as if susceptible of treatment in isolation. And here again the cognitive perspective treated may be found to include alien features, so to speak, such as pertain to other perspectives. There is, for example, nothing anomalous in distinguishing within the perspective of belief, depending upon the theory concerned with it, aspects that relate to perception or judgment. But the theory would be one of belief and not of perception or judgment, the function of the latter within belief remaining but subsidiary or ancillary. And judgment, too, as focal theme of inquiry, reveals intrinsic forms or operations to which different cognitive perspectives may be related as contents or supplements. But whatever be the connection between judicial and non-judicial modes of knowing, there can be no theory of judgment without presupposing its distinctness as epistemological subject matter.

It may not be amiss for the sake of clarity to draw some line between epistemological pluralism and a pluralistic epistemology. The former expression might well be used to indicate the possibility of maintaining separate theories about separate kinds of cognition, the latter might serve to justify on the basis of the former a theory of knowledge in monadistic terms.

If for a distributive conception of knowledge epistemological pluralism be considered a not unsuitable name, a pluralistic ep-

istemology denotes a collective conception, such that construes knowledge as comprising equally unique and thus ultimately inequatable noëtic perspectives. Briefly, the principle of topical differentiation which is a heuristic principle governing all inquiry, when applied to cognition as reflexive subject matter, becomes capable of conversion into a principle of perspectival separation, and the possible generification of such isolable and quasi-autonomous kinds of cognition I speak of as pluralistic.

What of monistic epistemology or epistemological monism? If the two expressions are held to coincide, we have an extreme doctrine, such as the mystic, which recognizes as authentic but one species of knowledge, a species exhaustive of the entire genus, all other alleged species, infected as they are with plurality, becoming thereby pseudo-species to be rejected entirely. This is monism with a vengeance, carrying unity to the limit of identity. For not only is what the mystic considers authentic knowledge internally undifferentiated, it ultimately coalesces with its object, so that mystic epistemology comes to be fused with mystic ontology, the distinction between them being but a speculative one and belongs to the prophetic phase of mystic discipline. Yet for the speculative mystic, confronted as he ever is with plural ways of knowing and plural ways of being, the distinction between his epistemology and his ontology remains basic, since his beatific vision of absolute unity can originally be nothing more than promissory. The consciousness of initial difference between the vision and the visioned must obviously precede the promise of their final union. On the reflective plane, therefore, the mystic explicitly draws a sharp line between the prospective knowledge of the real and the real to be ultimately known, his epistemology demanding that discursive thought be abandoned in favor of fervid anticipation of an awareness that by contrast *will* prove absolutely direct and inexpressibly intimate.

Monism more radical than the mystic's can hardly be imagined. His theory—and it can be nothing else than theory on the speculative level of the discipline—stakes all cognition of the real on a

single and singular mode of immediate and durationless awareness; for even the specious present, which is supposed to possess an infinitesimal structure, is too complex a medium for an experience so simple. Not by analogy with any process open to discrimination can mystic cognition be understood; indeed, how conceive of a cognition assumed to occur at an instantaneous present as occurring in time at all? Here the adjectives "mystic" and "mysterious" would seem to become completely synonymous. Anything harboring a discriminable plurality, however microscopic, *must* be transcended if monistic purity is to be insured. And if mystic monism is to be envisaged as pure, nothing can be more purely monistic than mystic epistemology.

Monistic epistemology of the impure sort, involving reference to plurality, may proceed in different directions, depending upon the method employed. Let me mention briefly two possible ways of generifying the plural modes of cognition by dissimilar procedures. The first may be called paradigmatic and the second dialectical.

The first procedure simply consists in viewing as prototype a single mode of cognition, other modes being, so to speak, "ectypical." Whatever determines choice of a certain mode as model, the mode chosen enjoys paradigmatic status *vis-à-vis* those derivable from or contingent upon it. Thus even experience construed as but sensory might be endowed with cognitive supremacy, genetic as well as generic, after the manner of the pre-Kantian British empiricists; and when experience is so enlarged as to permit inclusion within its meaning of conceptual or operational features, in accordance with Kant's Critical tenets or with those of modern pragmatism or instrumentalism, experience becomes a matrix of knowledge impressively extensive in reach. It is singleness of matrix by which a monistic epistemology becomes definable, and the contention that experience is such a matrix constitutes a theme with variations, though neither experience nor knowledge can be said to have exactly the same delimitation of scope in the different variations. To be sure, there is an opposite theme with

sundry variations of its own. The model for all knowledge may be sought and found in the ratiocinative mode, experience in every sense being reducible to a cognitively inferior status subject to reason's hegemony. But if authentic knowledge is to be restricted to rational knowledge, the nature of rationality being determined by reason itself in its role as autonomous agency, what is to be done with the cognitive claims of beliefs based upon experience? The problem of accommodating experience to reason thus becomes, as everyone knows, the crux of the matter, and with this problem the pre-Kantian rationalists struggled assiduously in different ways. Does Kant's notion of reason, when it loses "purity" in union with an alien faculty, afford an adequate foundation for a monistic epistemology? The monism of Kant's theory of knowledge is open to question largely because it is of two separate paradigms indissolubly formed. Sensibility and understanding, so heterogeneous in the extreme, are nevertheless co-equal in serving as mutually conditioning sources of genuine knowledge. And over and above such knowledge, which is a synthesis or resultant of two incommensurable factors, there is rational knowledge of the allegedly pure kind, knowledge completely independent of sensibility, toward which the Critical teaching can scarcely be held to have taken an unequivocal position. With some latitude in interpretation, Criticism could be made quite compatible with pluralism.

All this is familiar enough and hardly needed to be dwelt upon except for the light it throws on the monistic issue in epistemology. The most cursory mention of conflicting theories of knowledge shows that the conflict revolves in large measure about the choice of a single matrix for the various ways of knowing. Or (to use the idiom I find more convenient) the conflict is one of generification. On the assumption that there are plural modes of knowing, to which may be assigned the function of serving as generic model? Obviously, if one mode could be shown to include the others as derivatives or dependents, a generification of knowledge in its terms would indeed represent a monistic epistemology.

Unfortunately, there is scarcely a mode of knowing debarred

from use for such generifying function. The brief allusion to the differences in paradigmatic procedure between empiricism and rationalism was intended to illustrate that in the interest of monism experience and reason could be viewed as species of one another. The more inclusive theory, such as Kant's, comprising them as mutually implicative conditions, is so generically circumscribed that the description of it as monistic might well be considered a misnomer.

The examples chosen are not exceptional. The difficulties they indicate may be said to plague every monistic epistemology involving a single matrix. For there is no particular mode of knowing which possesses in its own right generic supremacy or paradigmatic status. To the view admitting as possible the generification of knowledge by means of any of its specific manifestations the history of epistemology lends ample support.

But there is an alternative to the plurality of monistic generifications, each presupposing a different mode of cognition as generic model. The alternative consists in interpreting the supposititious models as "moments" in a monistic dialectical scheme.

I beg leave to refer again to Hegel's *Phenomenology of Mind* but now construing it more narrowly (and perhaps misleadingly) as exemplifying nothing more than a monistic theory of knowledge. And it is a theory that definitely postulates a plurality of cognitive models, each enjoying a relatively paradigmatic status, none exchangeable for any other, and all subject to supersession by a dialectic governing their hierarchical order.

The dialectical monism embodied in Hegel's first major work hinges largely on the Kantian notion of the *as if*. But whereas in the *Critique* the validity it enjoys is essentially that of a regulative principle, in Hegel's text the *as if* is made to have a function mainly constitutive or constructive. As applied by Hegel, the part it is made to play is that of an indispensable fiction, in the sense elaborated by Vaihinger in his massive *Die Philosophic des Als Ob*. In distinction from fictional assumptions requisite for other purposes, the *as if*, interpretable as the moving spirit of the

dialectic, belongs to the group called methodological.[1] In the present context, a fiction signifies a form of deliberate make-believe endowed with tentative truth for the sake of arriving at a truth ultimately non-fictional. The Kantian principle of the *as if,* thus explicitly manipulated, is operative in the *Phenomenology* to convert a plurality of persuasions into a dialectically concatenated whole.

Every persuasion treated, Hegel exhibits initially *as if* it were solitary, independent, and self-sufficient, comparable to a monad, and this fictional procedure constitutes the heart of the dialectic. According to this procedure, the career of every persuasion thus taken in isolation consists in passing from pole to pole, in passing, that is, from complete self-centricity to metamorphosis into its very opposite, necessitating a "higher" persuasion to hold in solution its two extreme phases. But for the principle of the *as if* the dialectic could neither be instituted nor sustained. Every persuasion *must* embark on its career *as if* it were the supreme exemplar of truth, in the course of which, by asserting such an overweening claim, a situation ensues completely at variance with the persuasion's original meaning and intent. This self-alienation on the part of every persuasion, the "negativity," as Hegel called it, latent in its initial self-assertion, which can only be transcended in a higher form, is contingent upon successive use of a deliberate fiction. To eliminate the fiction is to destroy the possibility of the dialectic.

Of the fiction requisite for the dialectic it might not inaptly be said that it represents a kind of hypothesis contrary to fact. The assumption of monadistic persuasions, with which the dialectic of each must make its inchoate appearance, is a false assumption. But that it is false cannot be demonstrated unless first taken as true. Yet the falsity of isolated persuasions conditions the very integrity of truth, the whole truth being the union of all cognitive perspectives in which they lose nothing but their independence. It belongs to the paradox of Hegel's dialectical monism

[1] For a discerning statement of methodological fictions, see F. C. S. Schiller, *Logic for Use,* Harcourt, Brace and Company, New York, 1930, pp. 163 ff.

to adjudge all ideas and beliefs both true and false—true in organic relation to one another, false apart from such relation.

Here is a monistic epistemology entailing and transcending epistemological pluralism. Its holism is all-inclusive. Here every persuasion, not excepting moral or religious or aesthetic, enjoys cognitive value in virtue of an exclusive claim to a preëmptive content, since whatever the persuasion is about constitutes its "object." Cognition, having the most catholic possible connotation, here coincides with the notion of experience, and to the simplest as well as to the most complex forms of it accrue, as already noted, truth in one sense and falsity in another. But in the initial postulate that between a single mode of experience and its object the relation must be one of congruity lies the source of dialectical conflict. The postulate is ever vulnerable: the object turns out to be such as to demand a different type of experience or the experience a different type of object. The fiction of assumed harmony, the hypothesis that the experience and the object are bound each to each by ties of mutual adequacy, remains imperative alike for the inception of the dialectic and for its subsequent development.

The opening section of the *Phenomenology,* which contains the dialectic in embryo, affords a striking example of Hegel's way of assuming an untenable position as if consistently entertainable. Without the assumption, incredible *prima facie,* ingress into his epistemology becomes impossible. Here we plainly see the adumbration of the method directed and controlled by a fiction.

The experiment with immediate awareness, which Hegel identifies with sense-certainty, as point of departure for a dialectical theory of knowledge, is one which unmistakably shows itself to belong to the type of methodological make-believe, for such awareness, as Hegel stipulates, must be envisaged as purely *sensuous* and unquestionably *certain.* So to envisage it, however, requires that we purge sensuous cognition of all intellection and doubt. Suspension of reflective processes, processes that tamper with the alleged deliverances of immediate awareness,—those, for example,

exercised by judgment and inference,—is necessary for the experimental recovery of that conveyed through the senses and through them alone. A mind capable of shedding all belief and interpretation, naïvely accepting what impinges upon its sensibility here and now, would presumably enjoy a state of unalloyed immediacy and perfect certitude. No thought would be present to disturb the primal experiences of the senses, the fresh impressions of mere sight and scent and sound. For those inured in the operations of the intellect a mind reduced to a pure sensorium[2] would be difficult if not impossible to entertain. And yet it is precisely such a conception which is needed for a theory of knowledge having for its foundation the supposititious certainty of sensuous awareness. In this conception, deliberately feigned, Hegel's elaborate epistemology has its fount and origin. We *must* begin as if the notion of mind as pure sensorium *could* be rendered intelligible and significant.

Not only is the feigned notion of mind as pure sensorium requisite for starting the dialectical ball rolling, a still more baffling hypothesis must be assumed as if provisionally tenable in order to disclose the paradoxes which such a notion discernibly harbors. And this is the hypothesis of a reflective and loquacious sensorium!

To observe the absurdity inherent in sense-certainty, sense-certainty "itself" has to be "asked," insists Hegel, just what in particular it endows with immediacy. Now sense-certainty as here considered, not being an actual person but only an imaginative personification, is of course not susceptible of interrogation: what we put in the witness box, so to speak, is a strange simulacrum. Pretending to represent an imaginary adherent of sense-certainty, we cross-examine him as if he were able and willing to defend his claims. What alone conditions the entire dialectic of immediate experience is the alternation in our consciousness between the roles of examiner and examinee.

The first section of the *Phenomenology* is thus virtually a

[2] I am not unmindful of the liberty I am taking in giving the word a mentalistic turn.

dialogue, the interlocutors of which are a "subject" conducting an experiment and a "subject" submitted to it. The determined partisan of immediate awareness, existing nowhere except as fiction in the consciousness of the philosophic impersonator, can indeed be driven to the wall by interrogation but only if he is induced to say what he cannot possibly mean or mean what he cannot possibly say. And this is just what the dialectic of sense-certainty dramatically unfolds: a mind mythically conceived as pure sensorium becomes involved in ludicrous tergiversations when enticed to justify by discourse what discourse must inevitably falsify.

Consider the irony of demanding of sense-certainty (from which by hypothesis thought is absent—and absence of thought is what distinguishes the certainty of sense as sensuous—) that it differentiate between data of experience and the experiencing process, and that it declare whether immediacy is to be conferred on the data or the process. Now whatever problematic features may inhere in the notion of mind as sensorium, it does not devolve upon a feigned sensorium itself to discern or remove them. And a sensorium called upon to vindicate its position must of course come to grief. From the dilemma it is made to face, a sensorium can obviously not escape by resorting to argument. Immediacy raised to the level of discourse is indeed absurd but the absurdity lies solely in the attempt to reproduce sensuous experience through a non-sensuous medium. Yet the attempt must be made as if sensuous experience could be thus reproduced in order to demonstrate its impossibility.

We need not expatiate on the details of the attempt so clearly foredoomed to failure. Whatever a sensorium is made to specify as the content of sentience, affirming that it is *this* datum and *only* this, present but *here* and *now,* becomes at once abstract and indeterminate, there being no diction capable of denoting its alleged specificity, the vocables chosen to express *the* immediate object can always be applied to *any* object. What indeed is precluded from being labelled *this* and *here* and *now?* If a sensorium is forced to speak, the speech, suited for communicating

nothing but general aspects belonging to heterogeneous things, flagrantly contradicts the objects of immediacy. Nor does the immediacy ascribed to private sentience fare better: a sensorium shifting the argument from the object to the subject is in the same predicament. If sense-certainty is supposed to have its locus in the intimacy of awareness, the personal pronoun, which is here essential, is likewise abstract and indeterminate; no subjectivist declaring that "I mean only what is mine"—thus Hegel puns on the word *Meinen*—can claim to be a privileged "ego"; the word I, not designating a specific entity, is a universal pronoun to the use of which any and every subject is equally entitled.

The adherent of sense-certainty is thus reduced to silence, no words being available for defending his position: he must either despair of saying what he means or end by meaning what he says.

But silent immediacy, too, must be impugned: ineffable sense-certainty must be shown to be no less vulnerable. To achieve this Hegel resorts to the stratagem of assuming *as if* the immediacy of sense-certainty could be indicated by pointing to its alleged datum. Deprived of voice, immediacy is envisaged as depending upon gesture. Gesticulative advocacy of sense-certainty Hegel portrays with particular relish for its inherent comedy.

Hegel's triumph over this last refuge of immediacy rests on the fiction that an outsider in the "immediatist's" shoes, as it were, would be able to identify what the gesture is intended to convey. Identification of the datum of such vicarious experience requires again use of the temporal and local labels; for nothing could be pointed to if precluded from appearing here and now. But the milieu these terms describe is not simple enough to harbor an immediate datum denotable by pointing.

As regards time, there is no such thing as a simple present unless thought of as durationless, but in that case nothing could inhabit it to be indicated. As soon as any moment is viewed as specious, always supplanted by a moment of equal speciousness, fading at one extreme and budding at the other, what is alleged to occur at such a moment inevitably escapes identification by an act of gesticulating in its direction. With his penchant for

punning, Hegel finds the *Wesen* of the present in being *gewesen.* Accordingly, if the fulcrum of immediacy is what can *now* be shown, the fulcrum at once turns into one that was but no longer is. How point one's finger at the content of a vanishing instant without arresting the instant containing it? Since no instant can be experienced as instantaneous—that is, as an instant without duration—to conceive of a fugitive moment as housing, so to speak, an ostensive datum is palpably absurd.

Hegel has no difficulty in reducing to like absurdity the spatial counterpart of the present moment. The word "here," comparable to the word "now," signifies a location only speciously simple. Every here is an "extension-block" just as every now (echoing William James) is a "duration-block." It is an area whose distinguishable aspects are before and behind, above and below, right and left, etc. A unit of space, no matter how minute, conceived without divisions and directions, would be punctiform, but nothing could possibly appear there to be evincible. If the immediate is said to be here, in the distended sense of the term, no gesture could ever be unerringly certain of its putative aim.

The dialectic of sense-certainty is thus complete. There is such an irremediable contradiction between its meaning and expression that its essential incommunicability must be finally acknowledged. No vehicles of intimation seem to be available for the experience of that which is merely here and now. The comedy of immediacy is just this, that the certainty attributed to it remains undemonstrable. But this is a truth, Hegel holds, we can recognize only when, following his procedure, we assume the role of mouthpiece for immediacy and endeavor by word or gesture to denote an experience incorrigibly ineffable.

But the dialectic, it is clear, has its very inception in the attempt to render the ineffable effable. But for that attempt there obviously would be no dialectic. The contradiction seems to lie in nothing else than the experiment of grafting upon immediacy the forms of speech. Far then from being objective and necessary, the equivocations artfully extracted from the simulated idiom of

immediacy are but products of the philosopher's creative imagination. The dialectic of sense-certainty, produced by means of the *as if* as methodological fiction, constitutes an ingenious *tour de force.*

The feat gains plausibility from the postulate that experience and language are homologous. It thus becomes a matter of course that what cannot be said lacks significance and that everything speech conveys appears unavoidably general. Objects of immediacy are accordingly either nonsensical or non-sensuous—the former if actually unutterable, the latter if embodied in words. Nonsense or non-sensuousness—this is the dilemma in which the dialectic of sense-certainty is made to culminate. The triumph over sense-certainty is thus ultimately the triumph of language, the ineffable remaining impervious to criticism simply because it passes understanding. But if language, which is the medium of the universal, *can* be applied to sense-certainty, its objects become sublated into those of perception. *Wahrnehmen,* another of Hegel's ambivalent expressions, suggests that with the perceptual act we begin to "take" a thing as in "truth" it must be, namely, something amenable to description in terms of its determinate properties. All properties, however, and here again is a striking ambivalence, are at once an object's own *(Eigenschaften)* and shared with others *(Gemeinschaften).* Perception, too, will be found to owe its dialectic to the experiment of taking its objects *as if* each could be apprehended to have exclusive possession of the collective properties description must needs employ. But this is another and more intricate story.

However, in further support of Hegel's fictional method it may be useful to append a brief summary of the dialectic inherent in the perceptual situation when assumed as if isolable.

The story of perception runs parallel with that of sense-certainty. The imaginary percipient too comes to grief because his experience is not what he *says* it is. But Hegel's procedure in dealing with the two cases is quite different. The simulated advocate of sense-certainty, in being made to convey through word or gesture

what he finds here and now, discovers either that immediacy is ineffable or that the communicated object is universal. The percipient, invited to describe the perceptual thing in terms of universal properties, discovers that what he actually perceives is incommensurable with what he describes, and that, to save his description, he must appeal to a non-perceptual attitude. The "sensuous man" cannot express his alleged data; the percipient cannot truly apprehend his articulated object. Both are induced to distrust deliverances of experience that cannot be uttered without contradiction.

The logic implicit *in* perception cannot be grasped *by* perception. This is the sum and substance of Hegel's contention. Things, which a percipient takes to be so palpable, require for their expression the most abstract of concepts—being and becoming, unity and multiplicity, existence and essence, individuality and universality. These abstractions, and others like them, are all latent in any object of perception *given* as determinate and *taken* as such.

Perception thus turns out to be anomalous. Its objects are epicene, partly "sensible" and partly "intelligible." Present to be seen and touched, they are also under the dominance of abstract and opposed terms of discourse. This precipitates a dilemma: either the percipient ignores the logical distinctions requisite for fixing the notion of a determinate thing, in which case the object becomes that of pure sense, and his attitude toward it must become that of immediacy; or else he takes full cognizance of these distinctions, and in that case, what he perceives becomes indeed intelligible, but only because for the order and connection of things he substitutes the order and connection of concepts. Perception, serving two masters, can attain neither certainty nor clearness. Although rooted in sense, the sure enjoyment of ineffable immediacy is not the percipient's lot, since what he "takes" for his object is a thing describable by universal properties; although voluble, the percipient indulges in discriminations that are loose and improvised. The language he speaks, so Hegel declares, is the language of common sense.

The identification of the perceptive view with that of common

sense enables Hegel to give short shrift to the conventional animadversions upon philosophic speculation. Such animadversions usually bring into play the contrast between concrete things and abstract ideas. Real, it is held, are but the outer and solid things we perceive; philosophy deals with the impalpable things of the mind *(Gedankendinge).* These are airy nothings. The average man may hold them in contempt with impunity. Things of the mind are indeed what the philosopher chiefly prizes simply because by means of them he possesses and masters stubborn facts common sense runs up against. And how does common sense, which so glories in its incontestable perceptions, defend its faith in the reality of things merely seen? How does it render their substance immune from the abstractions of the intellect? To the philosopher's abstractions it opposes abstractions of its own. Common sense is continually hoodwinked by the flimsy concepts it contrives to make its position supposedly impregnable. The philosopher, who sees it enmeshed in cobwebs of sophistry, looks on and laughs in his sleeve. "It is always poorest," as Hegel says, "where it means to be richest." The things to which common sense so tenaciously clings become dissolved by the lame and impotent arguments it advances for the belief in them. Things are deceptive because deceptive are the pettifogging distinctions buttressing the common perceptions of them. Only when approached by the intellect can things be properly understood.

Such is Hegel's transition from the perceptual to the conceptual persuasion.

Hegel's procedure cannot be saved from seeming too arbitrary except by close attention to certain details here regrettably omitted.[3] I have confined myself chiefly to the aspect of the dialectic which, dominated as it is by the Kantian principle of the *"as if,"* may not improperly be called fictional. Viewed by Kant as pre-

[3] For a fuller statement, see the writer's, "The Exoteric Approach to Hegel's 'Phenomenology' ", in *Mind,* Vol. XLIII, N.S., No. 172, pp. 424-445; and "The Comedy of Immediacy in Hegel's 'Phenomenology' ", *Ibid., Vol.* XLIV, N.S. No. 173, pp. 21-38.

eminently regulative, the principle appears in the *Phenomenology* as constitutive of Hegel's theory of knowledge. Of this the treatment of sense-certainty affords a signal illustration: the cognitive claims of immediacy rests upon a fictional (feigned) assumption which upon examination reveals itself as fictitious (delusive). Yet such claims must be vicariously entertained as if true in order to exhibit them as false.

This transition from the fictional to the fictitious, if I may so phrase the matter, is characteristic of all the phases of human experience as Hegel dramatically reconstructs them in the *Phenomenology:* the claims of each postulated as if exclusively valid become indeed untenable but only in the absolute form in which they are initially advanced; their relative value remains preserved, and preserved as "moments" in a truth conceived as comprising within its total framework every type of human experience, the recapitulative career of which being marked by the rhythmic process of passing from putative monadicity to final absorption into higher expressions. For the truth, says Hegel, is the whole, the whole consisting of a hierarchical series of partial claims masquerading as holistic claims, and in the transcendental deduction of such masquerade as universal and necessary lies the proof of Hegel's monistic theory of knowledge.[4]

With all due respect for a great feat of speculative imagination, Hegel's holistic view of truth as constituting, as it were, an ordered series of postulated fictions or a masquerade of transmutable claims, precludes demonstration by the dialectical method. As indicated in an earlier context, the method permits no synopsis or synthesis the enjoyment of finality. No claim to inclusiveness, Hegel's not excepted, can be exempted from the necessity of

[4] Lest the term "masquerade" be deemed impertinent, the reader should be reminded of Hegel's cognate simile. In the Preface to the *Phenomenology,* he likens truth to a "bacchanalian revel where everyone is intoxicated; and because every member no sooner becomes detached than it immediately suffers complete collapse, the revel is just as much in transparent and pure repose." The original text reads: *Das Wahre ist so der bacchantische Taumel, an dem kein Glied nicht trunken ist, und weil jedes, indem es sich absondert, eben so unmittelbar sich auflöst,—ist er eben so die durchsichtige und einfache Ruhe.* (Hegels Werke, Vol. II, Berlin, 1832, p. 37).

counter-claims. The higher synthesis of antecedent antitheses, be they antecedent in a temporal or logical sense, must itself culminate in a higher antithesis. This the dialectical method ineluctably decrees.

Kant's regulative principle, to put the issue succinctly, refuses to be construed as constitutive. Hegel's monistic epistemology exemplifies, if one may say so, a fictional composition of fictional themes: the *Phenomenology* ends *as if* the concatenation of the series of cognitive perspectives so deliberately simulated represented the embodiment of absolute truth.[5] Hegel's dialectic, which begins with the fiction of sense-certainty, the preservation of whose relative truth requires a fiction of a higher order subject to a like sublation, and so on, can produce no end not itself fictional. The end, be it ever so embracive of the truth pertaining to the preceding fictions, if considered a result of the dialectical method, must find its own truth in a subsequent fiction. Only by some arbitrary fiat to hold the method in abeyance can the *Phenomenology* be said to contain the "deduction" of a monistic epistemology. It is as if the "power of negativity," curtailment of which must necessarily invalidate the dialectic, were enjoined by some *force majeure* to suspend operation in order that Hegelianism might enjoy the privilege of a truth free from supersession.

Pluralistic theories of knowledge can thus not lightly be set aside in favor of theories conceived as monistic. Be the monism paradigmatic or dialectical, the anomalies it entails seem far greater than those inherent in pluralism. As regards epistemology, the issue expatiated on involves a further complication, more embarrassing to monists than pluralists. This is a point which calls for separate consideration.

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[5] The last section of the *Phenomenology,* being the *dénouement* of the dialectic, has for its content significantly called *Das absolute Wissen.*

Chapter XIII

DIALECTICAL PLURALISM

All theories of knowledge, as noted in the previous discussion, presuppose as subject matter they purport to be theories about, the multiplex phenomena of knowing: perception and conception, memory and inference, judgment and belief, and so on. It goes without saying that phenomena chosen for inquiry have indisputable priority over the disciplines germane to them. No discipline without subject matter, and no subject matter without its exemplary *pre*-analytic data, the prefix denoting their antecedent status. Epistemology as cognitive discipline is no exception, its relevant phenomena being prior to the theories propounded concerning them.

Nor is mystic epistemology, if we confine ourselves to its speculative phase, without an originally given subject matter: there is a mystic theory of knowledge, not at the end of its discipline, culminating as it does in complete silence, but one embodied initially in the voluble asseverations regarding being and truth. Before the mystic attains his ineffable vision, his commitments are intellectual, motivated chiefly by dialectical considerations: his notion of true knowledge derives its sole significance from explicit contrast with the notion of false knowledge, the latter comprising everything deemed real and credible by non-mystic standards. Since absolute separation of the true from the false is for mysticism so crucial, truth having no expressible meaning without prior reference to error, the pre-analytic data of mystic epistemology are the same as those of non-mystic, to wit, the sundry cognitions men claim to have and claim to be true. All this is here reiterated to insist anew on the ineluctable priority of plu-

rality. Any and every theory of knowledge has no other subject matter than knowledge itself as given in many forms and different dimensions.

Comparisons of theories of knowledge would of course be precluded in the absence of a common subject matter. Many and various are the ways in which such theories could agree or disagree; knowledge as subject matter is open to diverse interpretations, hinging on the pre-analytic data selected and the method adopted. We need not rehearse points discussed earlier. The only issue here pertinent is that of monism *versus* pluralism, knowledge, as we have seen, being adaptable to either conception. A pluralistic view draws its force from the possibility of disengaging for separate theory each distinguishable mode of knowing as if it had no relations to any other or as if the relations it might possess or acquire were of the external kind. The most uncompromising monism is exemplified by mysticism, its principal tenet centering about the ineffable union of the subject and the object of awareness. Monistic theories differing from mystic are not so inflexible; such as the paradigmatic and the dialectical embrace elements borrowed from pluralism but by procedures hardly conducive to render their pluralistic rivals moribund.

The issue is particularly aggravated by the reflexiveness characteristic of the subject matter pertaining to epistemology. Knowledge about knowledge, with which this discipline is preoccupied, cannot be regarded as directly concerned with the nature of the objects of knowledge. There is of course no knowledge without an appropriate content, and epistemology, being a branch of knowledge, has a content belonging to no other branch—namely, the occurrence of knowing itself. Were it to address itself to a different content, epistemology would simply cease to be epistemology. Were it, for example, to invade the province of geology or astronomy or any other science, epistemology would forthwith lose its reflexive character and enter into competition with cognitive pursuits for which its claim to competence would be sheer supererogation. A theory of knowledge is distinctive precisely because it eschews being a theory of anything else. It has to do, to

phrase the point succinctly, not with the intrinsic nature of the *objects* of knowledge but only with the intrinsic nature of the *knowledge* of objects. Matters concerning the nature of things fall within the purview of the special sciences, the generifications of them being a task devolving upon ontology. The epistemological approach to things, as I have stated before, is of necessity "subjective," in the sense that study of their traits and ways of operation is but incidental to the study of the states and acts of a knowing mind. No theory of knowledge can question the assumption of the knower's priority and centrality without surrendering its claim to a particular field of inquiry. A "predicament" elsewhere, in epistemology, which is a reflexive discipline, the paramountcy of a "subject" remains a fundamental postulate.[1]

The subjectivism inexpungible from epistemology precipitates at a deeper level the issue of monism *versus* pluralism. How could the notion of an epistemological subject be conceived save as product of abstraction and generification? Presupposed for such a notion are individual minds exercising various functions, the cognitive function alone being disengaged for special attention. The "epistemic man," as it were, is the result of an abstractive process as much as his notorious brother the "economic man," and equally liable to fallacious conversion from a theme of inquiry

[1] Entirely illegitimate would thus seem to be the inclusion under epistemology of the problem, as phrased by Wm. P. Montague (*The Ways of Knowing,* The Macmillan Company, New York, 1925, p. 32),—namely, "to what extent, if any, are the things and qualities of the world dependent upon their being related as objects to a knower or a subject." It can scarcely be the function of epistemology, unless it be allowed to usurp that of ontology, to pass judgment on "the things and qualities of the world"; in what manner they depend for their "being" upon relations, cognitive or other, this can only be determined by strictly non-reflexive disciplines. Accordingly, the rival contentions Montague speaks of, those of objectivism, subjectivism, and dualism, are not matters susceptible of treatment by epistemology. There is of course no epistemology which does not exemplify an inalienable duality, resting as it does on the distinction between the subject of cognition and cognition as subject matter; but every epistemology, being reflexive, embodies preoccupation with cognition principally as mind's prerogative function. But to what extent objects as related to cognition depend for their being upon thus being related, how could the issue be decided by a discipline that can never step outside the reflexive circle? Within that circle, the objects discernible are objects in relation to a subject. The subjective predicament, if it be a predicament, belongs to the very essence of any and every theory of knowledge.

into an independent entity. Of many "topical men," if I may be allowed to say so, every human individual is composed, but their differentiation for purposes of separate study is contingent upon their antecedently given togetherness. The epistemological subject is a perfect example of what I am disposed to call a post-analytic datum; given as pre-analytic is the subject as psyche in all its heterogeneous and mutable aspects, the purely epistemic subject being a deliberate abstraction from it.

And this subject is abstract also in a narrower sense, in the sense of being generic, presupposing as such diverse minds alleged to discharge in comparable ways the function of knowing, whether through perception or conception or judgment or belief. In short, the subject of cognition, as posited by epistemology, is, so to speak, a universal having no meaning without reference to prior particulars whose generified forms and processes it comprehends. If contrariwise the "epistemic man" is endowed with a status altogether unlike that which belongs to a product of generification, the relevancy of such a supposititious entity to the multitudinous cognitions of the diversity of human individuals becomes an inexplicable mystery.

Crucial then is the relation of the plurality of actual knowers to the generified subject of epistemology. The plurality is a fact none can deny, being indeed a necessary presupposition for every theory of knowledge. What constitutes the theme of inquiry is Everyman's cognition, the cognition of *homo sapiens,* of which that of any individual may serve as sample, the inquirer himself enjoying a privileged position only if introspection is the method adopted. Within the epistemological context the idea of the generic has thus a twofold import, relating (a) to knowledge as preëmptive *object* of study and (b) to the presumptive *subject* as forming its center. And as regards either meaning, neither monism nor pluralism has a monopoly on the generic.

We have already considered the issue of pluralism *versus* monism in connection with cognition as object of epistemology. What must now engage our attention is how the same issue relates to the epistemological subject.

The plurality represented by actual knowers clearly admits of generification by a philosophy of pluralism. Allusion to Leibniz becomes here pertinent once more. For the *Monadology,* if viewed only as a theory of knowledge, and with the accent heavily on the subject of knowledge, may be construed as a defense of distributive solipsism in accordance with the assumption of a perspectival continuum. Every knower thus appears as an instance of monadicity, varying from every other not in kind but in degree. The conception of solipsism makes all knowers congeneric as regards solitariness and independence; each, however, remains absolutely unique owing to the specific perspective conditioning his apprehensions. This is subjectivism with a vengeance, not only because the principle of subjectivity is endowed with supremacy, but chiefly because the principle is extended equally to a plurality of "subjects," distinguishable from one another solely by the mutually exclusive perspectives from which they enjoy their respective cognitions. Accordingly, *the many solipsists are one in the nature of their solipsism.* This tersely epitomizes the essence of monadistic generification of the knowing subject.

The generification is burdened with a seemingly insuperable difficulty with respect to the ontology inferable from it. For complete atomization of the knowing subject logically involves corresponding fragmentation of the knowable reality. More generally, the counterpart of multiple solipsism could be nothing else than a splintered universe. The monads being by hypothesis absolute in their loneliness, no relation becomes possible between the separate worlds mirrored by them. Insulation of an infinite number of solipsists entails comparable insulation of the worlds without end they severally reproduce. This could hardly be gainsaid if we assume a monadistic ontology not only to follow from but to coalesce with a monadistic theory of knowledge. For, according to the original author of the theory, the monads are epistemic as well as existential units. It is these units, conceived as "soul-atoms," varying in degree from *petites perceptions* to infinite reason, which constitute the Leibnizian universe. Imposition upon the series of

soul-atoms of a harmony foreign to their intrinsic natures, and imposition, be it remembered, by one though supreme member of the series, is an egregious *tour de force* designed to mitigate the paradox inherent in multiple solipsism.

But, as shown earlier, the paradox can only be exchanged for another. The harmony established by the Supreme Monad runs counter to the conception of the *Monadology*. Indeed, can there be a Supreme Monad at all, and is God to be so named? If awareness of an infinite series of monads is requisite for the institution of their concord, does not such awareness destroy God's claim to monadicity? Should God then be envisaged as an exceptional monad, distinguished from the lesser monads not only in clarity but in completeness of apprehension? Is God perchance the only true solipsist who includes the others as images created to reflect in continuous and progressive order the fullness of his self-centered being? If so, how does the Leibnizian Supreme Monad differ from the Hegelian all-encompassing Absolute?

The transition from Leibniz to Hegel is not unnatural. It is latent in the conception of God as monad and in the relation of God's monadicity to that of the inferior solipsists. For God is either a member of the infinite series of monads or the principle of their integrity and harmony. If the former, the alleged infinity of the series is at loggerheads with God's position as original or final member; if the latter, God comprehends in holistic synthesis the infinite series, and in God alone, as in Hegel's Absolute, can each monad find its appropriate locus and rational explanation.

Is it too far-fetched to think of the *Monadology* and the *Phenomenology* as translatable in terms of each other? Just as the Supreme Monad appears as if endowed with features characteristic of Hegel's Absolute, so the latter looks like the Leibnizian God embracing and transcending a continuous progression of all possible modes of cognitive experience as if initially assertable as monadic. One may not improperly hazard the suggestion that the *Phenomenology* resembles a monadology invested with a dialectical form; the degrees of the difference between its constituent units

represent not so much degrees of clarity as degrees of amplitude. The units treated in the *Phenomenology,* which are human persuasions freely generified, are exhibited in the order of their dialectical development as advancing to ever higher grades of concreteness, concretion signifying a process whereby any unit becomes more comprehensive by incorporating within its texture the putative truth of its predecessor. The law governing the relation of Hegelian monads, to speak of them thus, might be epitomized under the image of death and transfiguration: the image calls attention to the necessity every persuasion is under to perish as a self-enclosed abstraction in order to survive—or to become *aufgehoben*—in sublimated form as constituent of a wider perspective. The widest perspective conceived as the most concrete, Hegel identifies with "absolute knowledge." This marks the end of the *Phenomenology,* "end" connoting both its finale and its purpose, all antecedent monadic persuasions losing their Leibnizian monadicity, as it were, but gaining transfigured uniqueness in the total chain of perspectives whereof cognitive absoluteness consists.

The ambivalence of cognitive absoluteness is striking: Hegel's argument demands that such absoluteness be considered spurious in one sense and authentic in another. The *claim* to absoluteness is inherent in every persuasion; and as relatively absolute, so to speak, it must indeed be regarded in the light of its private perspective and requisite idiom. Sense-certainty, for example, Hegel's starting point, does have a claim to absoluteness but solely on the assumption that a knowing subject could be thought of as pure sensorium. But mind as pure sensorium is a fiction, and even if it were not, a sensorium's supposititious awareness eludes, as we have seen, the power of speech. And yet, though discursive defense of sense-certainty leads to absurdity, since immediacy in any form must remain ineffable, the sensuous perspective, present in the context of every perceptual cognition, retains in relative fashion the certitude initially solicited for it, analysis showing it to enjoy the status of a necessary ingredient in a complex and describable apprehension. And so with every subsequent persuasion: taken in isolation as if it were a monadic experience, its initial claim to

absoluteness, which belongs to its very essence, turns out to be a specious claim when the conflicts and contradictions latent in the persuasion's asserted monadicity are explicitly revealed. The original assumption of absoluteness on the part of everything relative is a condition *sine qua non* for exposing its ultimate relativity.

The task devolving upon the dialectic is to furnish the persuasions deployed in the *Phenomenology* with wide open windows by which to escape from their inchoate monadicity. For it is only as appearing as if self-sufficient that persuasions resemble Leibnizian monads. Since upon reflection their apparent self-sufficiency turns into self-alienation, the quasi-monadic persuasions must undergo progressive sublation into ever higher forms, the highest form alone—and highest because all-embracing—having legitimate title to true monadicity and genuine absoluteness.

The conception of absolute knowledge in which the *Phenomenology* culminates, absolute in the sense of being the ultimate synthesis of all the illicit claimants to cognitive absoluteness, Hegel regards as entailing the belief in the reality of an absolute knower. And in this lies the audacious monism of his epistemology.

The *Phenomenology,* it should be remembered, is a phenomenology of *Mind.* The mind requisite for the relative persuasions exhibited as absolute is obviously the human subject liberally generified, presupposing countless specimens differentiated in various ways. Such a subject can hardly be assumed as capable of grasping and encompassing the whole truth. Truth in its totality, appearing in time's endless flux and requiring manifold forms to embody it, could only be the object of a mind universal in range and preternatural in quality. It is the notion of a superhuman subject with the claim to solipsism on an infinite scale which thus emerges as dialectical climax of the *Phenomenology.* The limited monadic consciousness, involved in each separate persuasion taken separately, must indeed come to grief; but the totality of truth, if it is to find lodgment within the compass of a single mind, calls for a type of consciousness commensurate with it. The monad of monads *à la* Leibniz, but evolved by the dialectical method, may be said to have become transformed into Hegel's Absolute Spirit.

And just as the Supreme Monad is implicit in the *petites perceptions,* otherwise the principle of continuity by which Leibniz set so much store would have been honored in the breach, so Hegel's Absolute Spirit is potentially present in sense-certainty, the principle of continuity being here likewise the basic premise although construed chiefly in dialectical terms.[2] Or, *vice versa,* the Supreme Monad can have no content other than that reflected by each and every monad, including the most infinitesimal, since the degrees of difference between them relate solely to the clarity with which the same content is reproduced. So, too, the Absolute Spirit's content must be identical with that of sense-certainty; the implications of sense-certainty come progressively to light in the subsequent series of persuasions, their totality not fully realizable except in what Hegel calls "absolute knowledge."

The analogy between the Supreme Monad and the Absolute Spirit must not be pressed too hard. I am not unaware of the major contrasts that divide Leibniz and Hegel. But my task is not exegesis. Taken illustratively the two philosophers may be viewed as grappling with a common problem, and this alone is here relevant.

The problem concerns the issue of pluralism *versus* monism as applied to epistemology with special reference to the status of the knowing subject. The *Monadology* and the *Phenomenology*—and their differences are great—reveal none the less a common and equally crucial difficulty.

In the Leibnizian conception of multiple solipsism we have indeed a radical version of pluralism but a pluralism tempered if not compromised by extraneous considerations. The alleged harmony of the monads, preëstablished from without, is by hypothesis not intrinsic to their natures; moreover, the harmony, having its source in God, raises the question concerning God's affinity with the monadic series. Does he or does he not belong to the series? If the answer is "yes," God can have no relation to the series, the principle of monadicity requiring his complete insulation from the

[2] Incidentally, it would not be inappropriate to consider sense-certainty as playing on the purely phenomenological level the role of *petites perceptions.*

lower grades similar to the insulation of the latter from each other; if the answer is "no," God must be conceived as the only true solipsist in whom the monads live and move and have their being as images designed to mirror in different degrees the knowledge of the only true knower, an ostensibly pluralistic epistemology thus turning monistic.

In Hegel's *Phenomenology,* the knowing subject is *ab initio* generic, increasing by degrees in ever greater catholicity, and reaching absolute universality with the attainment of absolute knowledge. Now absoluteness of knowledge and absoluteness of knower, though bound each to each by mutual implication, cannot be reconciled with the method from which they are supposed to follow. Absoluteness of the first is contingent upon arbitrary arrest of continuity, that of the second involves the anomalous apotheosis of mind.

If absoluteness of knowledge signifies, as in the *Phenomenology* it does signify, holistic comprehension of prior persuasions portrayed in quasi-monadic form, entailing the ultimate union of all antecedently conflicting opposites and the discursive fruition indeed of the truth latent in sense-certainty, such knowledge manifestly runs counter to the principle of continuity, whether historical or logical, governing the dialectic. There can be no termination of the dialectic without surrender of its claim to validity. I need not reiterate the point urged before—the incompatibility of method and result. Absoluteness of knowledge, in the way in which Hegel defends it, is simply indefensible as the outcome of a process the continuity of which dooms to inevitable supersession every outcome. As long as the process continues, no consummation of the process, absolute though it appear, could be exempted from the necessity of becoming, in Hegel's phrase, "its own other."

With absolute knowledge (if viewed as demonstrable by the dialectical method) remaining, to say the least, problematic, the argument for an absolute knower, required to encompass such knowledge, obviously falls to the ground. Stated hypothetically, the argument might perhaps pass muster: *if* there were such know-

ledge as Hegel conceives of as absolute, a subject commensurate with its all-inclusiveness would be a plausible inference. But it is not in this form that the conclusion of the *Phenomenology* receives justification. The treatise ends with a categorical deduction of a superhuman mind the dialectical structure of whose reason becomes revealed in the evolution of the human persuasions previously exhibited. Hegel makes adroit use of the concept of religious revelation, playing deliberately upon its ambiguity. The intrinsic content of revealed religion, central in it being the Triune God, does not, he contends, become truly disclosed in its historical or institutional or symbolic expressions. The notion of the trinity in revealed religion, wrapped in mystery and allegory, finds its philosophic rationale, so Hegel avers, in the triadic pattern of his logic. Solely through such a logic can the divine attributes of the absolute subject as arrived at in the *Phenomenology* become ultimately manifest. From the putative subject of sensuous awareness to the universal Logos as the ground of all seemingly irrational gyrations of human experience there is a progression which Hegel believes to be continuous and ineluctable. The phenomenology of *Mind* must thus be seen in the end as having been from the very beginning a phenomenology of *Spirit,* the latter term suggesting the apotheosis of mind as cosmic and eternal.

The apotheosis of mind as "spiritual" subject, untenable if regarded as the outcome of the dialectic, becomes altogether gratuitous when assumed as requisite for starting the dialectic. Sense-certainty, for example, the first persuasion to set the dialectic in motion, presupposes, as we have seen, mind reduced to a sensorium. Mind as thus stripped must be taken as already generified—generified, that is, by Hegel to suit his purpose, for anybody's mind may serve as exemplar when fictionally supposed as if it could discursively authenticate the ineffable immediacy of its experience. Whatever the conditions governing Hegel's reflective experiment with a subject professing to know indubitably the direct deliverances of the senses, the subject involved is clearly a finite specimen equipped with organs for receiving impressions, and not a global and infinite spirit concealed in a sensorium. The

apotheosis of mind is thus a *non sequitur* as well as otiose.

I do not wish to appear as making light of Hegel's notion of Absolute Spirit: I merely urge, confining myself to the *Phenomenology,* that the notion is neither needed for nor can it be made to follow from the dialectic. What then of Hegel's monistic epistemology to which that notion is so fundamental? "Not proven" must be the Scotch verdict. The subject, even on the human scale, whose manifold persuasions Hegel deploys in dialectical formation, is a fiction, in the sense previously intimated: it is as if all the discernible varieties of cognition belonged to the biography of a single mind, as if that mind's self-realization required in romantic fashion progressive absorption and supersession of all the incompatible ways of experience. But of course there is no such mind save as product of generification, the available data for which being extant in the diversified plurality of advocates of the plurality of their diversified ideas and beliefs. The universal subject of Hegel's impressive biography is thus but an object generified in accordance with a chosen point of view; though essentially fictional, the biography is not lacking altogether in symbolic verisimilitude. While the plural minds antecedently given do not exclude Hegel's generification, neither do they rule out other kinds, not excepting the pluralistic.

I will not pause to comment on Hegel's apotheosis of mind in connection with his ontology. This would involve consideration of the distinction and relation between the *Phenomenology* and the *Logic.* Suffice it to say, however, that the categories, shown at the end of the earlier work to be at once categories of thought and categories of being, whence the audacious equation of the real and the rational, fall into the same pattern as the persuasions, the climactic category, like the culminating persuasion, comprehending the dialectical concatenation of the entire series and thus the holistic realm of truth. If the truth is the whole, nothing but the total synthesis of the categories, realized by an absolute mind, can constitute its final embodiment. Epistemology and ontology are thus in Hegel's system two sides of the same shield, as it were, and the dialectical monism elaborated in it

ultimately rests on the apotheosis of mind. This monism, and it matters little which side of the shield receives the greater emphasis, stands or falls on the validity of the apotheosis. Once its validity is effectively challenged, the system breaks up into a plurality of sub-systems, as those of nature and history and society and religion and art, requiring indeed for their formal construction the same dialectical logic but having no common subject matter, and so long as the contents of the partial systems remain heterogeneous and non-interchangeable, they clearly lend themselves, as already noted, to an interpretation more consistent with the position of pluralism.

The dialectical road may accordingly be said to lead away from a monistic epistemology especially prescribed for or dictated by an ontology involving the apotheosis of mind. Kant had the advantage over Hegel, in spite of the latter's rejection or transformation of the basic tenets of *The Critique of Pure Reason,* in two respects. (a) The theory of knowledge propounded by Kant was not ancillary to a dogmatic ontology and (b) the knowing subject he defended enjoyed but limited universality. This intimates not too erroneously the tenor of the Critical teaching which, intent though it was on generifying the mind, resolutely refrained from apotheosizing it.

Kant's "Copernican" epistemology is psycho-centric with a vengeance, magnifying as it does the knowing subject as the transcendental unity of apperception from whose formative laws the laws of nature derive their origin and validity. But the knowing subject thus magnified ever remains for Kant the human mind, its universality being a necessary presupposition for all cognitive thought. The "I think," the constant and inescapable "companion" of all our representations, has for Kant no other function than to provide fixed anchorage for the possibility of our experience. The notion of non-human experience, which one might be inclined to consider as a matter of speculative interest, is for the Critical position irrelevant if not meaningless. The transcendental unity of apperception is thus a postulate requisite

only for justifying such cognition as is *de facto* ours, cognition exemplified by ordinary perception and scientific conception. The order and connection of our experienced objects have their source in the categorizing activity of the mind which as knowers we must uniformly exercise, for the categories employed are implicit in the logical forms of judgment, these being undeniably forms of our common understanding. The contents judged about, such, for example, of perceptual and scientific cognition, come from a transcendent rather than a transcendental source, one strictly extra-logical or extra-rational. There would obviously be no necessity for the postulate of a unity of apperception if human knowledge ceased to exhibit an intelligible dimension not derivable from sensible experience; and while such knowledge occurs and lasts, the supreme condition of its possibility will have to be traced to this postulate. Whereas Copernicus, in the words of one writer, "exalted the universe and humbled the earth," the revolution initiated by Kant, "exalted the knowing subject and banished beyond the limits of knowledge the whole universe of things *per se*."[3] The known world, the core of which is the glorified subject, is but a world of phenomena, and of such a world, owing to the centrality in it of the "appercipient self," the ultimate interpretation, the same writer holds, must be described as "anthropomorphic." As anthropomorphism, though not in a pejorative sense, Kant's doctrine might indeed not infelicitously be construed.

The Transcendental Unity of Apperception is a far cry from the Supreme Monad and the Absolute Spirit. Kant's Universal Subject has its appropriate habitat, it would seem, in a "logic without ontology"[4]: it is a methodological postulate and not an existential entity, a condition of human experience and not a separate object of knowledge. Kant's "appercipient,"[5] to put it succinctly, has but the status of a product of analysis.

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[3] James Ward, *A Study of Kant*, London: Cambridge University Press, 1922, pp. 60-61.

[4] I borrow the phrase from the title of a paper by Ernest Nagel, published in *Logic Without Metaphysics*, Chapter 4. The Free Press, Glencoe, Illinois.

[5] I employ the word in somewhat the same sense as it occurs in Ward, *op. cit.*

Here I beg leave to recall once more the distinction repeatedly made between the pre-analytic and the post-analytic. Within epistemology, being a reflexive discipline, subject and object are correlatives, distinguishable but not separable, mutually implicative or interdependent, having thus the meaning of post-analytic data. It is the cognitive situation which is pre-analytic; the constituents analyzed, its terms and relations, are indeed data but not in the same sense as the analyzable situation is a datum.

This applies with singular force to Kant's categories and the appercipient subject they presuppose. The categories are one and all post-analytic: analysis can abstract them from the cognitive situation because they are immanent in it, and the recognition of their immanence in experience as given on the pre-analytic level constitutes their "deduction." In other words, what Kant starts from is experience as a concrete and complex phenomenon; what he ends with is an account of the necessary conditions underlying its possibility. The primary condition, without which the categories would have their fount and origin in particular minds generifiable by a process ultimately inductive and hence lacking in universality, must therefore be a knowing subject of transcendental derivation. Arrived at by the critical method rather than the empirical, whence the name for its derivation as transcendental, the knowing subject owes principal validity to the demonstration that without it as indispensable presupposition *de facto* human experience would simply be unthinkable.

Kant's animadversions upon attempts to convert the subject of experience into an object of experience, contained in the important "Paralogisms of Pure Reason," reveal the fallacies of Rational Psychology (so, in accordance with tradition, he designates the discipline devoted to such attempts) when its arguments are reduced to the syllogistic form. With these technical details we are here of course not concerned. The crux of the formal difficulty appears to lie in the subject's elusiveness, for in becoming an object, its function as subject ceases, and unless related to a subject, it cannot assume the status of object: the knowing subject must thus be presupposed in the very attempt to know it.

If this be condemned as reasoning in a circle, the circle is innocuous, since no thought essentially reflexive can eschew it. With some linguistic latitude, the transcendental unity of apperception itself may suitably be spoken of as an "object" concerning which the *Critique* affords more than a modicum of knowledge, the knowledge, for example, that it is the original synthetic ground of possible experience, the primary source of the categories, the final achievement of a transcendental deduction, etc. No paralogism—within the context of Kant's reflexive inquiry—seems to be involved in turning the appercipient subject into an object of cognition, and the wealth of information about that object gleaned from the *Critique* is impressive indeed.

The trouble with Rational Psychology, as Kant views the matter, consists in its claim to be a branch of ontology, purporting to demonstrate the intrinsic nature of the knowing subject altogether apart from the epistemic context in relation to which alone it is conceivable. What breeds the paralogisms is transformation of an epistemic into an existential situation. It is one thing to presuppose a cognitive agency definable in functional terms, it is quite another to attribute to this agency an independent structure possessed of determinate traits. An appercipient agency and a substantial entity simply do not belong to the same universe of diction. The argument that the knowing subject is a spiritual substance enjoying freedom and immortality rests on what Kant so strikingly designates as a "transcendental illusion."

What, it seems to me, Kant basically inveighs against, may not inaptly be looked upon, using my own idiom, as the confusion between reflexive and non-reflexive disciplines. Epistemology is concerned not with the nature of things but with the nature of knowledge. To turn knowledge about knowledge, the preëmptive field of that discipline, into knowledge of non-reflexive subject matter, to which its relation could scarcely be other than oblique, is to violate the principle of topical differentiation. Epistemology is neither science nor metaphysics. To equate it with either is to commit some such fallacy as Kant attributed to a paralogism. One labors under an incorrigible illusion in construing epistemol-

ogy as if it were capable of transcending the boundary that divides reflexive from non-reflexive territories of cognition.

These cursory remarks on Kant are of interest solely for the bearing they might have on the issue of monism *versus* pluralism in epistemology with particular reference to the knowing subject. Kant's theory of knowledge, hedged about with so many reservations, cannot be said to admit of an interpretation unequivocally monistic. To be sure, Kant declares that "there is one single experience in which all perceptions are represented . . . in orderly connection, just as there is only one space and one time in which all modes of appearance . . . occur. When we speak of different experiences, we can refer only to the various perceptions, all of which, as such, belong to one and the same general experience."[6] But the singleness of the experience contended for is not free from ambiguity. *What* experience and *whose* experience can be held to exhibit singleness? For one thing, valid experience, as Kant uses this crucial expression, must be regarded as involving not only the duality but the dualism of matter and form, since sensibility (which supplies the former) and the understanding (which is the source of the latter) represent for Kant "faculties" completely heterogeneous; for another, its unity, due to the categories, depends upon a single appercipient subject whose concealed function consists in joining together the different experiences of different individuals into a common universal experience. Now what of the ontological status of the appercipient subject? Its status is clearly the same which Kant ascribes to space and to time—*to be and not to be real.* The unity of apperception, too, is but real as conditioning the possibility of experience, but ideal, in a transcendental sense, when such limiting condition is removed, the paralogisms serving as indirect proof of this. In other words, the singleness of experience, an assumption for which some evidence is not lacking in support of its *de facto* validity, stands or falls on the incontestable demonstrability of a universal knowing

[6] *Critique of Pure Reason,* translated by Norman Kemp Smith, Macmillan and Company, London, 1927, p. 138.

subject, unless indeed between ground and product of experience the distinction be abandoned altogether, in which case the deduction of the categories as *a priori* would of course go by the board. But the universality of the knowing subject, it must be remembered, is definitely circumscribed; like the universality of the analogous Categorical Imperative, it is without meaning and without relevance unless applied on the human plane. Were mankind to perish, the world as we know it would cease to exist too—the world, that is, as phenomenalized by the categories of a standard mind whose norms our individual experiences must uniformly exemplify to claim "objectivity."

If I have not misread Kant—and misreading him is so general that it has ceased to be a scandal[7]—the monism of his epistemology hinges on the attempt to discover in the actual plurality of knowing minds a singular mind universal *to* and immanent *in* them. The discovery of such a mind, present as the uniform and invariable subject in all objective experience—or in all veridical knowledge of objects—enables Kant to construct what one writer has aptly described as a *Kosmos des Wissens*.[8] This cosmos, however, being purely epistemic, constitutes a cosmos not transcending the human sphere. The world-order as exhibited by the *Critique* would be no world and would forfeit all order if it failed to embody the forms of man's sensibility and the concepts of man's understanding. From this point of view, science and metaphysics become "artifacts of reason," if I may here use this expression, owing their genesis and development to man's productive imagination.[9] But whereas the categories and principles of scientific artifacts must have reference to what is given through the senses and

[7] Professor George Boas justly observes in connection with his discussion of the *Critique of Pure Reason* (in *Dominant Themes of Modern Philosophy*, The Roland Press Company, New York, 1957, p. 473): "There are as many interpretations of this book as there are interpreters and no one can be sure that his is the correct one. But, like Plato's *Dialogues* or Spinoza's *Ethics*, it constantly tempts a student to try out his own."

[8] Georg Simmel, *Kant*, Leipzig, Duncker & Humblot, 1905, p. 78.

[9] The expression "Artifacts of Reason" is the title of a paper (printed in *The University of California Publications in Philosophy*, Vol. 22, pp. 45-73) in which I ventured to deal in some detail with certain discernible analogies between works of imagination and works of thought.

in space and time, metaphysical artifacts, if deemed capable of transcending the limitations the sciences are under, do not constitute Kant's epistemic cosmos, though included in it on account of their regulative function. This cosmos, bearing in mind the limiting conditions of its origin and validity, its composition and scope, exemplifies indeed a holistic conception of imposing design. And viewed as an achievement within the reflexive domain, since the knowledge vouchsafed by it is "transcendental," a knowledge occupied, in Kant's own words, "not so much with objects as with the mode of our knowledge of objects in so far as this mode is to be possible *a priori*,"[10] the *Critique* itself must be considered an artifact of reason, and one of classic proportion, the architectonic of the work being one of its notable features.

Although intent upon a systematic generification of human knowledge, the *Critique* cannot be said to qualify strictly as antidote to epistemological pluralism. Crucial is the relation between its different components—the relation, for example, of the categories to one another, of the categories to the transcendental unity of apperception, of the latter to the faculties of the mind, of the unique and unchanging appercipient to the plurality of diversified selves. The different parts of Kant's doctrine are seen as hanging together differently by its different interpreters, and there are not wanting those who, in spite of the work's rigid architectonic, perceive but slender connections between them. But be that as it may, our interest here must be focused on only one consideration. This has to do with the precise relation between the sundry empirical subjects and the single transcendental subject: the former are regarded as modifiable by historical and geographical and other conditions, the latter is liable to no modification, being indeed free from all limitations of space and time. If we think of the transcendental subject as self or ego (terms I have been studiously avoiding because of their nonepistemic connotations), whence the justification for the equation between its selfhood or egohood and that of particular individuals

[10] *Critique of Pure Reason, op. cit.*, p. 59.

whose motley experiences constitute the pre-analytic data for the Critical theory of knowledge? There is a gulf that divides the self or ego conceived as singular and simple and invariant from the multifarious and complex mortals that people the earth. If the unity of apperception is only a name for a generified human propensity, its validity can obviously have no justification other than empirical, and if the basis for its postulation is asserted to be transcendental, its validity may always be challenged by theories of knowledge following methods differing from the Critical. In either case the claim for its universality and necessity is open to question. And accordingly more greatly open to question is the claim for a monistic epistemology founded on the unity of apperception.

Problematic as Kant's monistic epistemology appears when the argument for the transcendental unity of apperception fails to carry conviction, its monism becomes highly dubious in the light of the ontological implications to which his theory is committed. The *Critique,* though purely reflexive in intent, requires for its self-imposed delimitation consideration of non-reflexive material, as the section devoted to the Transcendental Dialectic abundantly reveals. Of his things-in-themselves it may truly be said that Kant is unable to cope with them yet cannot do without them. He is impelled to affirm their existence if only to make sure of a realistic underpinning needed to differentiate transcendental from subjective idealism. And how otherwise distinguish the matter of experience from its form as having an extra-rational ground? If the categories are to be traced to mind, the contents to which they apply, the manifold of sense, must come from a source alien to mind. But what is even more important the things-in-themselves enter into the *Critique* as subject matter of metaphysics, providing the Dialectic with its appropriate pabulum. This part of the book would be altogether otiose unless a transcendent reality were posited for pure reason to preëmpt as its cognitive field. Far from casting doubt on such a reality, a reality not subject to the forms of human sensibility and human understanding, Kant's

theory of knowledge definitely entails it. The transcendental illusion, a theme of which the Dialectic develops the pregnant variations, attaches not to the belief in the *existence* of things-in-themselves but only to the belief in the possibility of ascertaining their *essence.*

The Dialectic shows how thin is the line drawn by Kant that divides reflexive from non-reflexive interests. Designed to bolster the Critical teaching by disclosing what happens if the concepts of the understanding are employed without the stipulated restrictions under which alone they can be held to condition the possibility of experience, the Dialectic might thus be regarded as if it contained nothing more than an indirect deduction of the categories. Metaphysical doctrines accordingly would appear foredoomed to failure if supposed to depend for their truth solely on the use of concepts extended beyond their legitimate function. And scepticism of all metaphysics must therefore be the consequence ineluctably following from the Critical theory of knowledge. This is one point of view.

There is, however, the other. The noumenal nature of things, one could plausibly maintain, constitutes a proper subject of inquiry not precluded by the Critical philosophy, vindication of speculative reason being one of its major tasks. To be sure, the claim to absoluteness on the part of a particular kind of ontology becomes inevitably open to doubt when tested by Critical standards, yet this very claim, though untenable, must be held, so Kant insists in accordance with his conception of a transcendental illusion, both unavoidable and incorrigible. No transcendental philosophy, therefore, can proscribe speculation on the destiny of the soul, the freedom of the will, nature's intrinsic traits and structures, God's existence and attributes, and other transcendent matters not amenable to the principles of possible experience.

And there is always the doctrine of the *as if* to save what does not admit reduction to the status of appearance. By means of this regulative principle of reason, non-reflexive speculation, speculation on things first and last, receives in the Dialectic its suitable deduction, supplementing that of the categories undertaken within

the reflexive framework of the Analytic. And although the results of speculation must of necessity assume different forms often mutually exclusive, the positions they embody possess too much separate cogency to cancel one another. Of the possibility of plural philosophic positions, each self-consistent by its own procedure and in its own idiom, the Dialectic might not inaptly be interpreted as furnishing an impressive demonstration.

A free interpretation of the *Critique*—and it would have to be very free indeed—invites comparison with that of the *Phenomenology.* Whereas Hegel's theory of knowledge exemplifies a dialectical monism involving the apotheosis of mind, an apotheosis utterly at loggerheads with the procedure alleged to justify it, the Kantian epistemology is more consistently adaptable to a dialectical pluralism, the mind in which it is grounded, though defined as transcendental, being simply the human mind carried to its uttermost generifiability. A tremendous *petitio,* as I have shown, is but thinly concealed in the claim for an Absolute Spirit as presupposition and culmination of the dialectical process. The mind whose cognitive biography the *Phenomenology* purports to portray is the very mind postulated by the *Critique.* Its transformation or (if I may say so) transubstantiation by Hegel is baseless: the method upon which he relies not only fails to support but actually invalidates it. The mind playing the part of knowing subject in the *Critique,* though not free from ambiguity, is clearly not a spirit with a divine halo; the conception of it as anthropomorphic, in an analogical sense, avoids the fallacy of turning the epistemological ego into an *ens realissimum.* It is only in Kant's epistemic cosmos that mind occupies such a central place: there are other planetary systems in which our sun is not the chief luminary. Thus in the same breath Kant contrives to elevate and humble the human knower.

One thesis emerging from behind the bewildering complexities of the *Critique* might be stated in fairly general terms: it concerns the distinction and relation between science and metaphysics. Produced by human agency—and is any other conceivable?—

scientific and meta-scientific structures are for Kant, to graft upon his thought my own idiom, "artifacts of reason." Of these there is a denotable plurality, science and philosophy being generifications of various disciplines antecedently flourishing. And of such generifications, too, many generic conceptions are, as shown above, ever producible. It is instructive to consider, even though but in passing, the Kantian way of generifying the different kinds of cognitive artifacts.

With regard to the sciences, what in conformity with the Critical teaching may be taken as determinative of their generic meaning? *Prima facie* it would seem to be method rather than content that should receive the greater emphasis. No other view is of course tenable if epistemology, unlike a science, has to do with studies primarily reflexive. It is scarcely feasible to contend for the unity of science without the sanction of a theory of knowledge on the assumption that a singular method called "scientific" comprises various modes of procedure applicable to sundry kinds of subject matter. The Kantian theory exhibits the conditions requisite for justifying that assumption. Obviously, the sciences must presuppose some logically invariant concepts and principles by which, irrespective of the material chosen for investigation, congeneric investigators are to be guided in their observations and inferences. Without presupposing this, scientific experience would be *de facto* impossible: observation would be random, inference wanton, investigators monadic. No science, in short, without consentient ways of inquiry instituted by minds endowed with common capacities. This can hardly be denied, for the attempt to do so would simply destroy the foundations of all established and accredited knowledge; if affirmed, however, the salient features of a Critical epistemology could upon analysis be found implicit in it.

Generification of science relative to content presents a complicated problem if broached in Kantian terms. For the *Critique* countenances two kinds of ontology. Within the reflexive sphere of the Critical epistemology, the contents of experienced objects are reducible to a manifold of sense appearing in spatio-temporal

contexts. Obviously, if such are the contents of the objects to which the sciences address themselves, their ontology becomes amenable to generic description. And it matters little whether this ontology be subsumed under subjectivism or phenomenalism. From the reflexive point of view, experienced objects can have no being save as related to the subject's forms of sensibility and understanding; it is only when the congeries of sense are viewed as coming from an external source, and for Kant they must be so viewed, that the being which experienced objects possess must be also described as phenomenal. The contents of experienced objects thus depend for their being not only upon appearing *to* the mind but also upon appearing *from* an unknown realm transcending mind. The ambivalence of the word "appearance" is here inexpugnable and scarcely odd. The ontological question considered reflexively—considered, that is, from the standpoint of epistemology—cannot be met, as I have urged repeatedly, except in connection with the knowing subject: *the objects which a theory of knowledge has to do with are objects such as they appear to the subject against an extra-epistemic background.* Every epistemology and not merely the Kantian implies an ontology definable interchangeably as subjectivism or phenomenalism.

But such immanent ontology, to use this convenient locution, can only be regarded as evasion of the real issue when the approach to it is non-reflexive—when, in other words, the intrinsic or the noumenal nature of things becomes the focus of interest. This Kant clearly recognizes, seeking in the Dialectic to achieve some balance between the ontology immanent in his theory of knowledge and the ontology transcending it.

What Kant emphatically shows on the non-reflexive level of the Dialectic is the logical absurdity ensuing from attempts to harmonize a transcendent ontology with the Critical theory of knowledge. Such attempts inevitably court disaster: they reveal themselves as incorrigibly enmeshed in flagrant paradoxes and fallacies. This constitutes the negative or sceptical aspect of Kant's philosophy; the only metaphysics permitted by its epistemology is, in H. J. Paton's phrase (the title of his painstaking

Commentary on the First Half of the First *Critique*), "the Metaphysics of Experience." Yet, in spite of Kant's insistence upon the disparity between science and metaphysics, the former alone enjoying cognitive legitimacy simply because its methodology has behind it the authority of the Critical theory of knowledge, metaphysical speculations are not without rightful claims when advanced by procedures germane and adequate to them. And it may justifiably be submitted that in the "deduction" of the dialectical method as a meta-scientific instrument of cognitive thought consists the corrective, as it were, of an epistemology so narrowly circumscribed.

To be sure, Kant deals with the method too sparingly, very cautiously, and under the restrictive conditions of his pedantic architectonic. Nevertheless, the fertility of the method is made strikingly manifest. In Kant's view, contrasted with that later developed by Hegel, the dialectical process is one generative of an irrepressible pluralism, opposites remaining unreconciled because they are basically irreconcilable. The Kantian dialectic is indeed Hegel's in embryo but without his hierarchy of philosophic positions culminating in the Absolute. Philosophic positions, provided they involve no breach of the law of contradiction, are neither mutually destructive nor mutually implicative. Cogent from their own perspective and in the light of their own postulates, the plurality of philosophic positions singularly accords with dialectical pluralism. Such I believe to be what Kant implicitly maintains (although I should be foolish to deny that disproof of this is not without textual support). It is permissible to contend that Hegel detracted from the value of the dialectic by making it ancillary to his spiritual monism. And it is also permissible to contend that his own *Phenomenology,* strange to say, does not resist a pluralistic interpretation in accordance with the dialectic as adumbrated by Kant.

Chapter XIV

GENERIFICATIONS OF TRUTH

The pluralism I have been defending on grounds largely dialectical, though the legitimacy of fathering such pluralism upon Kant and Hegel may indeed be open to serious challenge, is bound up with the conception of philosophy as an undertaking chiefly concerned with the generic. If, in accordance with the principle of topical differentiation, philosophy is to have a preëmptive subject matter, whether reflexive or non-reflexive, its subject matter must possess the kind of generic import not duplicated elsewhere. It may sound odd to speak of the specifically generic and the generically generic but the oddity is purely linguistic. Some such distinction, however phrased, seems inevitable if any line is to be drawn between science and philosophy. I suggested in an earlier context that the boundary that divides scientific from philosophic cognition may not improperly be sought in the difference between special universals and general universals. Such language too sounds strange but is none the less apposite. Is not every science intent upon the universal? But limited as every science is to a particular field of specialization, the universals achieved by it, those resulting from generalizations relating to a specific subject matter, can only be special universals and thus distinguished from the universals arrived at by another special science. To say that universals are special when confined in application to the contents of the special sciences is obviously to utter a tautology but one not necessarily without meaning. Some tautologies have their important uses. Assuming the plural sciences to be divisible in accordance with their preëmptive domains of specialization, the claim to generality or universality made by

any scientific discipline for its conceptions or hypotheses or theories has no verifiable validity beyond the range of the preëmpted specialty. Different sciences may of course generate universals pertinent equally to their respective non-interchangeable specialties. But that generalizations restricted to the content of one science are valid also in relation to that of another is a matter that does not pertain to the content of any particular science. Study of the bearing of intra-scientific universals on inter-scientific relations is one reserved for the discipline I have called meta-scientific. It is philosophy which has, so to speak, a horizontal dimension; within its universe of discourse, the generic, though related to the specific, is not itself specific, and its universals, unlike those of any science, are accordingly not special but general universals.

There is a fallacy committed perhaps more often than any other which I am tempted to call the fallacy of begging the generic question. Not uncommon is the assumption on the part of those identified with something specific to think of themselves as authorized adequately to represent the genus alleged to include it. The fallacy has its obvious and crude expressions. Thus members of certain particular groups, ethnic or religious, for example, are apt to regard themselves, merely because of such membership, as if they were entitled to pronounce universal judgments on matters of race or theology. Many a "class-conscious" individual sees nothing ludicrous in posing as authentic instance of whatever be the class he happens to speak for. All this everyone knows and need not be pursued further.

The fallacy of begging the generic question appears under guises more refined and more plausible. Artists not seldom exhibit it when on the basis of familiarity with only one of the arts they voice critical or doctrinary opinions on all art. There presumably are cogent reasons for holding that music and painting, for example, have many features in common in virtue of which they may be considered congeneric. The discipline called aesthetics, usually listed as a branch of philosophy, may or may not succeed in producing definitive generifications of the arts; at any rate, it is a task devolving upon no other discipline. Mu-

sician or painter, unless well versed in that discipline, can scarcely pretend to speak with authority on any art but his own. And yet it seems to occasion little surprise to hear painter or musician deliver himself of pontifical utterances, no more privileged than those of laymen, on the sense of beauty or significant form or creative purpose or norms of valuation. And other artists are not wanting who on the basis of rightful claims to expertness in their respective specialties venture into the field of philosophic generification. The fallacy involved in this is hidden by the unexamined assumption that proficiency in one of the arts affords insight into all the others.

Of greater significance is the fallacy when encountered among men of science. Scientists, not unlike artists, are limited in competence to particular areas of interest and activity. And here, too, there is on the part of specialists the pretension to regard themselves as the authorized spokesmen, not merely for their particular specialties, but for science as such or science as a whole. Not a few, whatever their fields of specialization, feel often impelled to expatiate on many generic aspects of science, solely on the ground, it would seem, of the specific researches in which they are engaged. But the general universals in which they indulge are scarcely justified by modes of procedure to which their special universals owe their basis and validity. In venturing upon universal judgments applicable to all science, they appear to forsake the very method which is supposed to guide them within their own cognitive territories in arriving at judgments of restricted universality. In so doing they perforce perform the work of philosophic generification—by instinct, so to speak, and not by logic. The feeling of kinship between students laboring in separate intellectual vineyards remains but a feeling until shown to be well grounded by methods of inquiry directly devoted to the unity of knowledge as a distinct theoretical problem. How indeed could votaries of the special sciences avoid begging the generic issue? Whatever traits they might graft upon science as a whole would in all likelihood be traits cognate with those be-

longing to some favored species in which alone they are expert. The generifications of the sciences by the scientists are necessarily under the dominance of preferential perspectives and attitudes. This is equally true as regards philosophic generifications. But the latter, being philosophic, are fruits of cognitive thought in quite another dimension.

This cursory mention of a prevalent fallacy, not intended as mere digression, sums up in terse fashion points made at great length in earlier parts of the book, namely, that plurality is indispensable and generification inevitable. The fallaciousness of the fallacy ultimately consists in this, that the generic is either unwarrantably assumed or the activity requisite for its affirmation is exercised at haphazard or irresponsibly. It is the fallacy essentially of common sense. As exemplified by certain scientists when speaking as self-appointed representatives of Science, the fallacy, though not without irony, is particularly instructive. Responsible generifiers within their own realms in accordance with canonical ways of inquiry scrupulously followed, they tend as a rule, with respect to matters not intrinsically or intimately related to their own specialties, either to revert to the standpoint of common sense in generalizing on grounds inadequately examined or rashly to adopt the unaccustomed idioms of philosophy. Conjectural generification of science by one special discipline and under its naturally biased auspices may justly be held theoretically suspect; problems relating to the unity of science, which form no part of any scientific subject matter, properly belong, as repeatedly urged, to the realm of inquiry deliberately meta-scientific.

Before embarking upon our present theme, it is necessary to recall briefly one more point. Meta-scientific generifications of the sciences may take different forms, depending upon whether their procedures or their contents are primarily selected for comparative study. Methodological unifications of science may accordingly be distinguished from ontological, and of each kind plural versions become possible, varying with the philosophic positions by which choice of comparable data is determined. The sciences, as

noted earlier, operating as such in independence of their meta-scientific generifications, are compatible with any theory intent upon generifying them, and there is hardly a philosophy—be it, for example, rationalism or empiricism, mechanism or vitalism, physicalism or phenomenalism, idealism or realism—to which the sciences fail to yield for purposes of comparison freely eligible data. It is precisely free choice of data that differentiates philosophic generalizations from scientific; the latter are based upon the pre-analytically given as definitive or exemplary of a particular subject matter. As long as a philosophy, differing from any science in cognitive dimension, is free to range far and wide for its appropriate data, and those chosen for one meta-scientific construction need not be compulsory for another, the plural generifications of science, incommensurable as the positions they embody, may be readily rendered consistent with pluralism.

The possibility of interpreting as pluralistic plural generifications precipitates the crucial issue of truth. In what sense may generic theories of science be spoken of as true or not true? Is it legitimate to use comparatives in connection with truth, declaring some theories truer than others? If methodological generifications have greater truth-claims than ontological, which of the numerous scientific procedures should be accorded generic supremacy? And as for the varieties of subject matter the sciences are dealing with, could their master traits be construed as comporting, let us say, rather with the metaphysics of naturalism than with the metaphysics of idealism? If we contend that all generifications are equally true, what theory of truth can support such a contention? The hornet's nest stirred up by these questions is of no minor magnitude.

It might perhaps be argued that the problem relating to the meaning of truth should enjoy priority over the question of whether philosophic generifications are true or not, or whether some possess greater or all equal truth. We should, so the argument might run, first know what truth signifies before appraising pos-

sible claims to it. The argument strikes me as being without force. For—and this is decisive—no univocal meaning can be assigned to truth wthout begging the generic question. A definition without reference to usage would of course be completely arbitrary, and even those addicted to the doctrine of definitional liberty would scarcely maintain that the problems centering about truth are each and all simply and purely verbal. It is safe to say that truth has no philosophic meaning except as generified. And any generification presupposes plural truths with different senses in different contexts. But because any generification is determined by a choice of some paradigmatic area, whether of belief or of intuition or of judgment, it constitutes but one generification among many, since there is nothing to forbid, save a philosophic position with no jurisdiction over any other, selection of models of truth found to be exemplified in dissimilar cognitional regions. (Incidentally, if plural generifications of truth could be shown to be possible, the dialectical pluralism I have been maintaining would receive strong reinforcement.)

But first some observations are in order on the distinction between substantival and adjectival uses of truth. As noun, truth seems inevitably to carry with it a generic import. What but a general conception can we have in mind when discoursing about the problem of truth, the nature of truth, the criteria of truth? When truth becomes the subject matter of philosophic inquiry, not the truth of this or of that is of primary concern but truth as such or truth *an sich.* As employed by epistemology the topic is obviously of the reflexive kind, and pursuit of truth about truth is not inappropriate, provided the distinction remains unblurred between "truth" and "the true," for a theory of anything implies a truth-claim. As a matter of fact, plural theories of truth are not wanting, theories supposedly about the same subject, and each in claiming to be true rejects the others as false. There is nothing anomalous about this. To substantivize truth into an object of knowledge is simply an act intrinsic to reflexive inquiry, being no more paradoxical than inquiry intent upon the meaning of meaning or the analysis of analysis.

No law decrees that truth must not be truly reasoned or spoken about. Precisely *what* may be qualified as true or not has been a matter of dispute, and of its abatement there is as yet no discernible evidence. Small wonder that in their use of the concept of truth logicians and mathematicians and *Erkenntnistheoretiker* and metaphysicians do not seem to inhabit the same universe of discourse.

With the votaries of a logic purged of ontology and epistemology I am not disposed to quarrel; their so-called truth-values, having by hypothesis no cognitive significance, fall outside the purview of the present discussion. Logic so purified is a fictitious logic. An uncontaminated discipline, guiltless of association with any theory of knowledge and of reality, must obviously depend on modes of utterance radically different from those described with conscious disdain or unconscious as "natural." The chief desideratum thus inevitably becomes complete identification of all thought with an artificial language ruled by a utopian syntax. The themes covered in this field of endeavor call for special treatment and by those whose technical equipment for dealing with them are more adequate than mine. Mere allusion to an esoteric logic, semantic or symbolic, suffices to reveal the pathos of distance between its notion of truth and the notion with which we are normally preoccupied.

But of logic there are many kinds, and not all logicians look upon their subject as if it were a glorified game capable of being played with no philosophic commitments. Yet any logic, though irrelevance to the nature of things need not constitute a cardinal article of its faith, involves the issue of truth in this general form: How are we to distinguish the truth-claims of a logic from the truth-values assigned by it to certain operations? It is one thing to speak of a true logical theory in relation *to* its chosen subject matter, it is quite another to assume as valid the distinction between the true and the false inherent *in* the subject matter. The truth-*values* required for a logic and the truth-*claims* made for a particular logical system have little in common save the word. As an autonomous discipline, logic must indeed, at the bidding of its subject matter, operate with a fixed distinction between the true

and the false, regardless of the varied senses in which the same distinction appears elsewhere. But it is precisely the extra-logical senses, so to speak, which elsewhere do adhere to the distinction, that is primarily of philosophic interest. And paradoxical though it sound to say so, the claim to truth on the part of an individual logical theory must ultimately remain extra-logical—that is, grounded on a theory of knowledge or a theory of reality.

The true and the false, no matter how employed in a logical context and for logical purposes, are adjectives of which logic has no monopoly, there being extra-logical candidates for them; and of no mode of cognition could it be asserted *a priori* that it is exclusively amenable to or exclusively exempt from their jurisdiction. Theories differ, and differ radically, with respect to the delimitation of the concept of knowledge as well as of the concept of truth. These concepts have been interpreted in various ways, the interpretations of their import ranging from extreme circumscription to extreme latitude, and choice of examples for the same, drawn from historical and contemporary sources, would only, even if space permitted, prove embarrassing.

But speaking generally, and without attention to the technical minutae to which the diverse positions on knowledge and truth owe their probative force, there are recognizably those who think of knowledge as a species of cognition and of cognition as a species of experience, and who limit the application of truth to assertable judgments in which alone the proper exercise of the cognitive function is to be sought. Neither experience as such (including as it does non-cognitive regions of consciousness) nor mere cognition (which covers also non-judicial ideas and beliefs) can be said to have a decisive bearing on the distinction between the true and the false. What then becomes of modes of experience precluding judicial expression? Are they significant modes of cognition at all? For ways of experiencing are but psychological facts; like other facts, it is not they but the judgments concerning them that are true or false. Strictly speaking, therefore, if truth-claims are

exclusively claims of judgments, presumptvie knowledge not embodied in judgments occupy, as it were, a neutral zone; its truth-values not preceded by truth-claims are simply indeterminable. But judgments, too, have psychological connotations and must thus be transmuted into propositions. And when judgments become equated with propositions and propositions with sentences, the truth-values of knowledge receive at last exact though chaste formulation.

For others, however, the distinction between knowledge and cognition seems gratuitous, serving the interest of a certain philosophic position to which none but its adherents need subscribe. Discursive and non-discursive ways of knowing presuppose a matrix within which they may be distinguished and located, the term experience denoting such a matrix. Different ways of knowing thus become equatable with different kinds of experience—or, rather, all modes of experience may be spoken of as cognitive and as possessing truth-values appropriate to them. There are true and false perceptions, true and false beliefs, true and false inferences, and so on, and the sense of the adjectives fluctuates with the experiences to which they are ascribed. The truth of perception, for example, can of course not coincide in meaning with that of belief, and *vice versa.* Obviously, however, if all truth-values are to be interpreted as congenerous, choice of a paradigmatic way of experience will determine the generification attempted. But to this we shall return anon.

Equation of the cognitive with the experiential, every mode of experience amenable to the distinction between the true and the false, exemplifies the broadest conception of knowledge and of truth. I trust I may be allowed another passing reference to Hegel, for his *Phenomenology* is here singularly apposite. His use of experience in that work is certainly catholic, embracing as it does every conceivable human persuasion, and the dialectic of experience may not inaptly be said to involve an incessant interplay and tension between its truth-claims and truth-values. It belongs to

the essence of every persuasion, whatever the object thereof, to asseverate its rightful claim to truth; indeed, having a persuasion and believing it true go inseparably together, so that assertion of a persuasion means for Hegel the same as asserting a truth-claim, a claim initially set forward as inviolable. But mere assertion of a claim is no guarantee that the claim is valid, especially if complete agreement of a persuasion with its object is here regarded as the ultimate criterion of the claim. When this criterion is applied—and this is the crux of the matter—the claim turns out to be spurious: assumed enactment of it generates a truth-value incompatible with the truth-claim originally asserted. This rhythmic alternation of assertion and enactment, claims to truth originally made proving subsequently to harbor contradictory truth-values, runs through the entire *Phenomenology* in connection with every persuasion put to the dialectical test. This test might in part be identified, without too heavy a linguistic strain, as essentially "pragmatic": if in consequence of a reflective experiment with a persuasion's inchoate truth-claims, truth-values are discovered contrary to those expected, revision of the claims in the light of such discovery must necessarily be attempted. According to Hegel, indeed, the result is that every persuasion thus tested acquires with respect to truth a sort of epicene status: it becomes at once true and false, true as one of the inalienable perspectives and false if held in isolation. But such details are here irrelevant; of interest is only this, that Hegel's expanded notion of experience, with persuasion as its cognitive paradigm, represents one possible generification of truth, either monistic or pluralistic, depending upon, as shown above, whether the conceived series of persuasions is or is not terminable in an Absolute.

At the risk of offending all concerned, some enterprising scholar should undertake a detailed comparison of dialectical and pragmatic generifications of truth. The outcome would be a salutary lesson to the unwary not to be misled by the animus of controversy. To be sure, a locution whose connotations are deliberately psychological or biological would have to replace the strange

idiom characteristic of the *Phenomenology.* Persuasion, in particular, the term I have adopted principally because of its epistemic implications, cannot entirely be made to convey what would be considered basically experiential in pragmatic theory, though Royce's description of Hegel's logic as a "logic of passion" must give us pause. And the notion of experience, equally primary for both, is in Hegelian and pragmatic doctrines of unequal depth and range; its use in the *Phenomenology* is not confined to the individual or even, in accordance with the ambiguous conclusion of the treatise, to the human level. Likewise the processes of assertion and enactment, on which, if I am right, the life of the dialectic chiefly depends, would have to receive a quite differently slanted sense to be construed in pragmatic fashion. Nevertheless, these and other matters aside, and they are not merely verbal, it would not be difficult to show that as regards determination of truth-values Hegelian and pragmatic views exemplify an astonishing affinity.

According to the *Phenomenology,* truth-values result not from asserting truth-claims but from acting upon them. This admittedly is a cardinal tenet of pragmatic philosophy. And if the meaning of action be extended to include reflective response to belief—the practice of imaginative anticipation of consequences—there could be no radical antithesis between Hegelianism and pragmatism. They represent but different versions of the same doctrine that abstract or formal statements of a belief's truth-claims cannot endow it with truth-value. Truth accrues to concrete consequences of which asserted claims are premonitory expressions. For Hegel as well as for pragmatists, to stake out a truth-claim, so to say, is to plan a course of action for converting it into a truth-value. But there are many kinds of action. The questions at issue are numerous and intricate, touching on the distinction and relation between the varieties of human action, the methods for testing their successes or failures, the criteria governing judgments regarding the same. In principle, however, for Hegel no less than for pragmatists, claims to truth are nothing but barren assurances—*trockene Versicherun-*

gen, as Hegel calls them,—apart from the operations requisite for revealing their bases and degrees of legitimacy.

Generification of truth in terms of a paradigmatic mode of experience may be contended for without pursuing further the more or less whimsical suggestion concerning possible comparisons of Hegelianism and pragmatism. And such a mode might well be found in judgment, provided only—and the proviso is fundamental —the emphasis be laid on judgment chiefly in relation to belief. The ambivalence of judgment is notorious: its roots lie in an attitude of mind, its flowering in a form of utterance. Hence the equivocation of the truth-values said to belong to judgment—are they attributable to the attitude or to the utterance? The equivocation is irremediable except on a theory in accordance with which judgment comes to be assimilated *either* with one *or* with the other—if with the attitude, the most intimate affiliation of judgment is with belief; if with the utterance, its natural kinship is with proposition. Characterization of judgment as true or false would make sense in either case; common usage sanctions ascription of the adjectives to beliefs as well as to propositions.

A theory of judgment as expressive of belief (whether labelled pragmatic or not) is certainly tenable. Confusion might be avoided if there could be strict adherence to the distinction between structure and function. The difference between noun and verb is here all-important: the noun favors identification of judgment with proposition as if it were an entity possessed of an independent form, the verb denotes an act, and the act of judging is scarcely conceivable without a mind performing it, and performing it either to yield or to withhold belief, whatever the object, not excluding the object exemplified by the entity called proposition. In general, one who forms a judgment is in all likelihood desirous of conveying a deliberate opinion rather than a verbal sentence. The sentence *through* which judgment speaks and the sentence judgment passes *on* whatever solicits belief clearly represent distinct sentential species. Should judging be viewed as an act never occurring except at the bidding of belief and inseparable from it?

This calls for detailed analysis of the act, involving genetic as well as generic questions, of no concern in the present context. In any case, judgment may here be simply regarded as an act by means of whose operation an experiencing subject asserts or negates credibility imputable to anything experienced or experienceable.

Whatever the grounds for excluding psychological considerations from a pure theory of logic, such exclusion from a theory of knowledge is manifestly absurd. For, as I have maintained, epistemology is basically "psycho-centric" (and, according to some versions of pragmatism, "bio-centric"); the cognitive situation, which alone can supply epistemology with its pre-analytic data, would cease to be cognitive if analysis succeeded in analyzing away the experiencing subject. With cognition in which the subject does not enjoy unqualified ubiquity, epistemology, being a reflexive discipline, can of course have no acquaintance. If knowledge constitutes its preëmptive field of inquiry, every epistemology must perforce acknowledge mind's centrality, there being no acts of knowing, from bare perceiving to abstract reasoning, which does not require a psyche to discharge them. And what of the truth-claims of the acts of knowing? If such claims are to be derived from a common matrix, the act of believing, which involves or is involved in the act of judging, would seem to have priority. It is doubtful whether in the absence of belief the question of truth could ever arise. Unless I am mistaken, the psychology (or phenomenology) of belief is such that the distinction between having a belief and believing it true is a distinction without much difference. It is an essential characteristic of belief that it appear from the start charged with inexpungible truth-claims. And how may ascertainable truth-values be differentiated from incipient truth-claims unless the latter be justified by the success of the action they initiate and direct?

Once belief is seen as precluded from making an appearance without at the same time appearing laden with truth-claims, the problem is to account for their possible conversion into truth-values. What, in other words, confers upon belief the truth to

which originally it seems to have presumptive title? For answer we must turn to the doctrines propounded in "philosophies of action."[1] Not all the themes subsumed under action are comparable, receiving as they do in the different doctrines different treatment and emphasis. Nevertheless, with regard to action as basic to the nature of truth, those philosophers whose views are variously described as pragmatic or instrumental or operational or experimental, adjectives of dissimilar denotation but of like connotation, would seem to be one in principle. I speak of course in very general terms, naming no names, lest exegetical details invite polemic and detract attention from the main issue. Readers of these pages should by now be aware that my allusion to individual thinkers has but an illustrative aim. And if, in connection with the philosophy of action, I refrain from mentioning explicitly this or that representative, the reason simply is that no single spokesman can be held to be just to all the facets of a movement so singularly variegated. Let the reader himself invoke the image of the man who in his opinion is the most authentic exemplar of this fashion of thought.

If one summary word could adequately describe the theory of truth here under consideration, the word to choose would clearly be "experimental." Assuming that all truth-claims originate in beliefs or with beliefs, and assuming that the truth-values accruing to beliefs may fail to coincide with those initially claimed, how else is one to test the justifiability of the claims except by experimenting with them as if they were credible, the decision hinging upon the consequences ensuing from the experiment? A scientific hypothesis, a belief whose truth-value must hang in the balance until completion of the crucial experiment designed to affirm or disaffirm the provisional claim, may here be regarded as paradigmatic. For, consonant with the experimental theory of

[1] I borrow the expression from Professor George Boas who, in his *Dominant Themes of Modern Philosophy*, cited above, discusses in Chapter 19, pp. 592-611, under the general caption "Three Philosophies of Action," the doctrinal affinities of William James, John Dewey, and Josiah Royce. Taking seriously Royce's designation of his position as "absolute pragmatism," Professor Boas convincingly justifies the inclusion of Royce within the same philosophic movement to which James and Dewey belong.

truth, all ideas must be conceived as being initially quasi-hypothetical. To be sure, there is in such a theory the difficulty of squaring the meaning of ideas as beliefs with their conception as plans of action. Should ideas be understood as exercising the function of hypotheses as well as that of experiments? In scientific procedure, one thing is the hypothesis as truth-claiming belief, another is the experiment as action planned to test the hypothesis. And if the truth-claims of beliefs are prior to the truth-values conferred upon them by action, the sense in which ideas are analogous to hypotheses (beliefs) can obviously not be the same sense in which they are comparable to experiments (plans of action). Be that as it may, however, and assuming the difficulty not insurmountable, the important point for us is that here we have one possible generification of truth. All truth-claims, in this view, have their locus in ideas envisaged as beliefs; beliefs are hypotheses expressible in hypothetical judgments; hypotheses derive their truth-values from experiments; experiments are operational ways for testing hypotheses; operational ways may succeed or they may fail; success or failure serves as ultimate determinant of truth-values; success or failure is susceptible of degrees in accordance with temporal and other conditions; experimental truth is thus the very antithesis of absolute truth.

This follows the pattern of every philosophic generification. With the choice of belief as model, all ideas may be fitted into a common matrix, their claims to truth being analogous to those of hypotheses and justification of the claims to successful action upon the same. This constitutes the core of the matter. All other theories of truth appear from this point of view either otiose or amenable to experimental metamorphosis. Experimental logic, when its canons are seen as pervasive, does not exclude as ancillary or instrumental forms and structures of discourse endowed elsewhere with independent or privileged meaning. A theory of logic, construed as a theory of inquiry, thus becomes an integral part of a philosophy of action.

But, it will be asked, is this logic? ("But is this art?" is a similar query often raised concerning anything in that field ap-

pearing exceptionable.) Who is to say? Those who call themselves logicians either commit what I spoke of before as the fallacy of begging the generic question or are simply generifying their subject matter in such manner as to preclude recognition of experimental logic as logic. But just what is and what is not logic is precisely the point at issue, touching the nerve of every conception of truth. The experimental conception of truth involves a theory of logic comporting with it; and as a logic purporting to serve as a generic theory of inquiry, it can absorb every other kind, the mathematical not excepted, as particular species.[2]

What incidentally I am hinting at is the question of criticism in relation to philosophic generification and particularly to that of truth. Criticism here may take two forms, and only one is ultimately pertinent. Since liberty of choice as regards its data is relatively unrestricted, no generification can be judged except in its own terms and by its own standards. The decisive criterion is none other than the principle of contradiction. A generification, though a voluntary product, is a rational one, and the discourse in which it is embodied must be free from self-inconsistency, this being a categorical imperative, as it were, enjoined with respect to its formal side upon cognitive thought as such. The injunction is one imposed by every kind of logic, including the experimental; to question the logically compulsory nature of the principle of contradiction is to deprive of probative force all reasoned arguments whether scientific or philosophic. Even a doctrine required by its basic position to repudiate the principle's authority would not thereby forfeit philosophic merit provided the disparagement appear in a form in harmony with the principle. But what should be said of those persuasions whose formal articulation is by deliberate design violative of the principle? Whatever their value in other ways and in different contexts, they must ultimately be placed outside the pale of philosophy. This "excommunication,"

[2] I have in mind of course John Dewey's *Essays in Experimental Logic*, Chicago, 1916, but especially his larger and comprehensive work, *Logic: The Theory of Inquiry*, Henry Holt and Company, New York, 1938.

if such it be, is justifiable only if the continuity between science and philosophy is not to be jeopardized by including within the notion of the latter the aberrant and the occult. Philosophic generifications, achieved by reason and submitted to reason, are certainly open to internal criticism; accordingly, no generic theory of truth can be formally rejected unless found running counter to the criterion of self-consistency.

But another form of criticism appearing under various guises is external or extraneous and sheer impertinence when assuming, as it often does, a magesterial tone. Such criticism is familiar enough. A philosophic doctrine is often impugned in accordance with a standard definitely not its own, as if it could be reproached for being what it is and not something different. Whence the necessity of a doctrine to relinquish distinctiveness of character in relation to its chosen assumptions or postulates, interests or data, method or language? Judgment of a doctrine by alien criteria, those laid down by its rivals, is tantamount to the fatuous demand that, in Hegel's idiom, it become "its own other." There are philosophies abroad behind whose hypercritical principles unmistakably lurks an ultra-dogmatic temper. Animadversions on the experimental theory of truth, for example, misfire completely if, instead of aiming at difficulties the theory might intrinsically harbor, they are chiefly intent upon censuring the theory for violating meanings and procedures considered inviolable in positions an experimental logic is designed to replace.

No theory of truth, it is safe to declare, can make much headway without coming to terms with the nature of judgment. For in the final reckoning, to what if not to judgment are "true" and "false" applicable? That judgment enjoys a monopoly, so to speak, initially on truth-claims and ultimately on truth-values, would seem to be an opinion not generally gainsaid, regardless of the fundamental ambiguity or ambivalence adhering to the concept. What precisely *is* judgment? For on the one hand, its relation is to ideas, and on the other, to discourse. Should we view it primarily as something in connection with attitudes of mind and chiefly with those involving beliefs or as something

recognizable only in formal statements, which some logicians distinguish from, and others identify with, propositions? Clearly, the sense in which we think of beliefs as being true or false cannot be the same sense in which we use the adjectives as qualifying propositions. What this boils down to is a question of priority: is judgment primarily "psycho-centric" or "logo-centric"? No question is more paramount as regards generifications of truth. For it is over this question that one generification may be said to be divided from another.

The force of the argument for experimental generification lies, as shown, in a philosophy according to which the meaning of ideas may be rendered equatable with the meaning of beliefs, and since beliefs are prior to their expression in judicial form, their truth-values hang in the balance until the formulated truth-claims can receive affirmation or disaffirmation in the course of being acted upon. For a philosophy of action, too, truth depends on judgment; but judicial expressions of truth-claims are here irrelevant unless fitted into a matrix of ideas and beliefs in which to serve as cognitive instruments.

In a non-experimental generification of truth, judgment becomes equally paradigmatic, but only when purged of association with psycho-centric beliefs and identified with logo-centric propositions. Such generification I venture to speak of as vehicular. If it is in propositions that truth is alleged to inhere, no matter whether believed or not, truth would seem to depend on its objective content or on the manner of its formulation. It is manifestly difficult to find a locus for truth-claims (on the assumption that they are not generated by beliefs) except in the discursive medium through which they are communicated. Of claims not *made* nothing can be said or gainsaid; no claims are susceptible of proof or disproof unless antecedently *asserted;* assertability of claims presupposes the logical form of *discourse;* and the vehicle uniquely required for conveying truth-claims is the *proposition.* Generification of truth in terms of vehicular propositions is thus bound up with a theory of judgment less

related to an attitude of mind than to a mode of utterance having objective reference.

For such a generification of truth the distinction between truth-claims and truth-values becomes more or less secondary. Retention of the distinction as fundamental would militate against reduction of judgment to proposition. For the claim to truth in behalf of a proposition is quite different from the truth-value assumed to be intrinsic to it. That a proposition *is* either true or false may be plausibly enough maintained. But who can properly speak of a proposition as *asserting* its own truth? Propositions, though possible possessors of truth, are as such no claimants to it. Assertability is a capacity with which propositions themselves are not endowed. In other words, propositions do not depend for their truth-values on truth-claims made by prior judgment expressive of belief. The order must here be reversed. Truth-claims, which indeed only minds engaged in judging are capable of making, depend for their meaning on the truth-values antecedently lodged in propositions.

Whatever logicians may choose to do with propositions—and they seem to do wonders with them—for a generic theory of truth, and one germane to epistemology as well as ontology, propositions are judicial statements, varying greatly in form and application. How differentiate, for example, with respect to their significance and validity, such judgments as Kant introduced, to wit, analytic and synthetic, *a priori* and *a posteriori,* general and transcendental? They obviously differ not as pronouncements of belief but as appurtenances of discourse. Here judgments are clearly synonymous with propositions. Kant's whole theory of knowledge rests on a formal logic whose judicial modes when limited to the sensible manifold function as categories. For the generification of truth implied in and restricted to his epistemology, a theory of judgment is basic, the distinction between the true and the false having relevance chiefly to formal utterances conceived as formative, and these, as requisite for the possibility of experience, vary in kind and applicability. Neither Kant's epistemology nor the generification of truth it entails can be under-

stood without reference to judgment as universal matrix within which are to be grounded all *knowledge* of objects and all *objects* of knowledge, in the Critical sense of these expressions, and judgment unmistakably equatable with proposition. The equation is especially noteworthy, emphasizing as it does the rationalistic element in Kant's theory of knowledge. The categories as derived from the propositional modes of thought, conditioning *a priori* all valid or objective cognition, are incontestably "logo-centric."

The generic nature of truth, with propositions as its principal determinants, may be considered in two different ways, depending on whether the stress fall on the manner or the matter of propositions—whether, in other words, it fall on their idioms or contents.

Of the notion of truth with reference to its mode of utterance it is not inappropriate to speak as vehicular. The expression frankly metaphorical is designed to suggest not the independence of propositions (such as they might come to possess in some system of logic) but simply the office (assigned to them by an epistemology) of embodying the truth-values ascribable to cognition. After all, are propositions as such true or false; or is it not rather knowledge to which the adjectives must pertain when expressed *through* propositions? In the path of this query lies many a pitfall.

A major difficulty concerns the distinction and relation of logic and epistemology. A theory of knowledge too much under the dominance of a logic such as the semantic might, in consequence of its preoccupation with the syntactical structure of propositions, tend unduly to disregard their ancillary function: as if sentences were vehicles requiring nothing to convey. The degree of intimacy obtaining between a theory of logic and a theory of knowledge will determine whether truth-values assigned to propositional forms have priority over those claimed for their contents, and *vice versa.* Theories of knowledge, disposed to make central the problem of language, must inevitably lead to different generifications of truth in accordance with the particular diction chosen.

It goes without saying that propositions couched in a physicalistic idiom, for example, will be endowed with truth-values not commensurable with those phrased in psychological terms. The point need not be labored. So long as epistemology does not coalesce with pure logic (whatever be the conception of its "purity") propositions in any language, regardless of their semantic or symbolic structure, must be taken as vehicles through which the truth of knowledge of every mode or grade receives articulate expression. Of vehicular generifications of truth a great variety becomes therefore possible, depending upon the number of languages into which propositions are translatable.

But what more basically accounts for the possibility of polyglot propositions and thus of various vehicular theories of truth? How are the different languages to which propositions lend themselves related to what the propositions purport to be true about? When we consider the many lingual ways to which propositions prove themselves to be adaptable, the problem of choice emerges as crucial. Why one language rather than another? Why, for example, should or should not physicalistic statements be preferred to phenomenalistic? Why should the mother tongue, as it were, of one cognitive discipline be singled out for the privilege of speaking the truth, the whole truth, and nothing but the truth? The appeal to a logic purely formal would of course be completely useless: no logic which proclaims its independence of epistemology or ontology could prescribe or proscribe the terms in which the ways of knowing and of being should find their appropriate formulation.

Irresistible would seem to be the argument that all vehicles of truth-values are necessarily idiomatic simply because the objects to which they are apposite can be neither exchanged for nor reduced to one another. If propositions have any cognitive function at all, their separate idioms are dictated by the separate things with which they must needs be conversant. Linguistic pluralism, if I may say so, is rooted in the necessity of pluralistic descriptions to which the data of the diverse cognitive disciplines are *prima facie* amenable. Descriptive statements, differing in ac-

cordance with their objects, cannot be excluded from the class of propositions except by arbitrary fiat. Such propositions, however, are clearly ontological in import, for the descriptive idiom proffered can be accorded authenticity only in virtue of its supposed congruity with the intrinsic nature of the objects described.

The demand that all descriptive propositions speak a single language is tantamount to the assumption that all things have a single describable nature. Ultimately, it is but monistic ontology with which linguistic pluralism remains incompatible. And in this connection one cannot but wonder if the critique of "natural" language on the part of those intent upon a dysontological logic is not wittingly or unwittingly a defense of metaphysical monism. Logic is not without its little ironies. Language in actual use, scientific as well as philosophic, is incorrigibly pluralistic; propositions expressed in different idioms, admirably fit the different things with which the different disciplines are differently preoccupied.

The descriptive aspect of propositions, whatever the idiom used, is susceptible of many generifications for purposes of a theory of truth comporting with it. Without loss of their function as vehicles of truth, propositions may be held to transmit truth primarily in relation to the contents they are designed to embody. And since the contents are what they are described as being, the truth transmitted hinges on the authenticity of the description. In other words, propositions are true if the objects to which they have reference intrinsically possess the nature attributed to them. For a generification of truth in such terms a name is not readily available without identifying it too closely with a particular ontology. Indeed, such generification may accord with any philosophy committed to the general thesis that truth is not truth unless existence constitutes its ultimate sphere of relevance. In speaking of it as the complementary theory of truth, a designation not very happy, my intention is to join together what tradition has kept asunder, namely, the demands for coherence and correspondence.

The truth of real propositions (if I may thus distinguish them from their merely vehicular function) is markedly double-edged. For viewed formally (as linguistic utterances) propositions cannot be true if they are self-inconsistent; and considered materially (as existential statements) propositions cannot be true if they fail to agree with the objects they are asserted to be about. Truth concerning real propositions accordingly is formal as well as material, requiring dependence on the complementary criteria of coherence and correspondence. These criteria can of course not be limited to single propositions unless the objects to which the propositions refer are conceived as atomic and cognition of them as isolated. Examples from the perceptual field, so much in favor in learned discussions of the problem, are hardly adequate to show the parts played by the complementary notions of coherence and correspondence in a more comprehensive meaning of truth. "Bodies" of knowledge, and the metaphor is a pregnant one, such as scientific and philosophic, consist of concatenated propositions applicable to congeries of things and events, their truths being vouched for, on the one hand, by the coherence of the concatenation and, on the other, by correspondence of the same to the relevant subject matter. Propositionally assertable knowledge aspiring to truth must thus be understood as subject to a twofold compulsion, so to speak, one "logical" and the other "factual." These terms are too vague to be of much use without elaborate interpretation but they suggest nevertheless a polarity amenable to the Principle of Complementarity, if it be permitted to give the principle a sense extended far beyond the meaning it has within the framework of the quantum theory in physics.[8]

It goes without saying that different philosophers will comprehend under the dual compulsion (if such it should be called) altogether different things. But this does not matter here. Of importance in the present context is the fact that coherence and correspondence are a pair of terms bound to crop up in technical debates over truth. The debates seem to confront us with a grave

[8] It is hardly necessary to mention that the phrase ("principle of complementarity") here generally applied is associated with the name of Niels Bohr.

dilemma as if we could choose between a coherence theory and a correspondence theory. What I here designate as the theory of complementarity, avoiding as it does this unfortunate dichotomy, is simply a generification of truth presupposing a theory of judgment as a theory of real propositions, such propositions being determined by the nature of rational discourse as well as by the nature of existential data.

Disagreements over problems of truth would be greatly clarified if the two following questions could be kept distinct, namely, "What is true?" and "What is truth?" The first presupposes some subject to which the predicate true either does or does not apply, the second assumes that truth itself is the subject of predication. And predicate and subject alike lend themselves to different generifications.

As for the predicate, the thesis may be maintained, a thesis not without fairly general support, that judgment alone has a rightful claim to it, the question at issue centering about the nature of judgment. Generifications of the predicate will accordingly vary with the interpretation of judgment.

To sum up: (a) If judgment is reducible or relatable to belief, a true judgment is tantamount to a true belief, and a true belief depends for the possession of the predicate on success of the action generated to confirm the claim to it. This when generified becomes the experimental theory of truth. (b) If judgment is identified with propositions, and propositions with statements of a determinate structure, semantic or symbolic, through which alone anything could be asserted as true, the predicate may be annexed to particular formal ways of making statements. The generification of this constitutes the vehicular theory of truth. (c) If judgment, though identifiable with propositions, is identified principally with real propositions, such as are under the double governance of the rules of discourse and the constitution of existential subject matter, then the predicate is one attributable ultimately to statements when they satisfy the demands both for coherence and correspondence. And this when generified de-

velops into the complementary theory of truth. These theories are quite distinct, and the names given to them, unwonted though they appear, are intended to bring out the adjectival meaning of truth, one varying in generifiability in conformity with the different conceptions of judgment.

But "What is truth?" is a question involving the assumption of a predicable subject or an explorable subject matter. It is not an illegitimate question. Sundry theories may be—indeed, have been —propounded in answer to it. That truth as substantive is but derivative, in the sense that it is a generification of the variety of adjectival uses in connection wtih different modes of cognition, is certainly plausible. No less plausible is the argument that no meaning could be attached to the adjectives true and false in the absence of a prior conception of substantival truth.[4] The tendency to hypostatize truth as a separate entity is familiar. Is truth one and whole or are there many kinds and degrees of truth? Is truth eternal or temporal, changeless or mutable, universal or endemic, absolute or relative, necessary or contingent, discoverable or inaccessible? Tormenting issues, these, latent in the hypostasis of a noun!

And should we not regard theories of truth as discursive judgments, thus bringing them too, as pointed out before, under the jurisdiction of the distinction between the true and the false governing all other judgments? If so, and if one judgment about truth be deemed true and another false, which generification of truth should be invoked to justify attribution of the predicates? I hardly need enlarge on the dialectic which the question adumbrates. Yet the search for truth about truth, being reflexive, is no anomaly in philosophy.

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[4] Whether adjectival employment of a concept is prior to its substantival meaning, or *vice versa*, is of course not confined to the concept of truth. The same question of priority may be raised in connection with time and space and causality and other notions. Students of Kant need not be reminded that in the *Critique of Pure Reason* space and time, for example, are held to be not generalizations from experience but the conditions of it, so that spatial and temporal descriptions of things, functioning as adjectives, depend for their meaning on space and time considered in substantival fashion as *a priori* unitary concepts.

Before concluding the present discussion and by way of transition to the next, let me accentuate the following points.

1. The possibility of ascribing truth-values to theories of truth presupposes the priority of the adjectival function of truth. For all generifications require generifiable data, and generification of truth is no exception, its data being whatever opinions or statements or facts are assumed to be credible in different senses and on various grounds. On the pre-reflective level the notions of the true and the credible are more or less confused, and no theory of truth, unless it be considered a creation *ex nihilo,* can avoid reference to the distinction as well as the relation between the two notions, in accordance with which the credible might not be true or the true credible. "What is true?" would be a question of little meaning or relevance in the absence of the countless objects of human credibility serving as pre-analytic data. And it is precisely in connection with such data that truth becomes a problematic theme with numerous variations. Could the idea of truth ever be divested of the idea of credibility? Any theory condemned as not credible by its own standards would hardly be of the kind able to solicit general assent. At all events, cognition is prior to any philosophy of cognition; if the difference between the credible and the incredible is implicit in all cognition, philosophic generifications of truth depend for their generifiable contents upon antecedently given modes of cognition.

2. As argued in these pages, free selection of generifiable data distinguishes philosophic from scientific generifications. Incompatible theories of truth are thus possible, hinging upon the cognitive areas chosen for the requisite data they comprise. Are the true and the false univalent in dissimilar fields—in such, for example, as perception and inference? To be sure, by a strange stratagem it is customary to eschew the adjectives and to speak instead of perceptions as veridical or non-veridical and of inferences as valid or invalid, as if modes of cognition ceased to be true or false when the adjectives are replaced by latinized synonyms. Restriction of the adjectives to judgment requires not only a particular theory of truth justifying the restriction but a

particular theory of judgment on which it is based. And as we have seen, different aspects of judgment may be chosen to serve as pre-analytic data for generifying differently the nature of judgment as well as the nature of truth comporting with it.

3. The pluralism I have been contending for thus receives added support from the possibility of many speculative generifications of truth. Such multiplicity is inherent in the varied import and use of the predicates true and false. Who can maintain that these predicates apply in the same sense to statements as incomparable as mathematical and historical, economic and religious, political and aesthetic, and so on? And even as regards scientific statements, in view of their dissimilarity in origin and content and aim, the predicates are far from enjoying complete univalence. In what sense then may the predicates be held to partake of a generic meaning? Can this generic meaning be other than a product of philosophic generification, and does it not presuppose as model or matrix the truth-values pertinent to some specific area of human interest? And if of such a product no philosophy can arrogate to itself the privilege of exclusive formation, truth may be variously generified in accordance with the variety of speculative positions.

4. The sciences, it is important to note, are engaged in producing bodies of knowledge by methods and techniques adapted to their different subjects of inquiry and thus attested as true in different ways. The part played by judgment in connection with scientific truth, though central in all fields of inquiry, is more prominent in some than in others, depending upon the meaning judgment is assumed to have. Judgment as expressive of belief to be acted upon is particularly operative in sciences chiefly experimental; judgments as propositions amenable to the requirements of formal discourse are in the ascendant in those sciences guided by standards of rigidly logical exactitude borrowed from mathematics; and judgments conceived as real propositions subject to the complementary criteria of coherence and correspondence are involved in such sciences explicitly descriptive or explanatory of the intrinsic nature of things. The lines cannot be sharply drawn

when or where scientific judgment appears in one role and when or where in another. The sciences owe no fidelity to any speculative theory of judgment. Their preoccupation is not with the problem of truth but with the problem of true knowledge in their respective bailiwicks. The problem of truth, like the problem of knowledge and of reality to which it is related, viewed as a generic problem of universal scope, falls within the purview of meta-scientific or philosophic inquiry. But of this something more must be said in the sequel.[5]

[5] For a quite different and more detailed treatment of the material covered in this and following chapter, see the writer's "The Paradox of Judgment," *Journal of Philosophy*, XXV, pp. 197-205, as well as, "The Fourfold Root of Truth" and "The Prepositional Nature of Truth," *University of California Publications in Philosophy*, X, pp. 209-241 and XI, pp. 3-32, respectively.

Chapter XV

THE INTERPLAY OF PREPOSITIONS

Whoever speaks of "scientific truth" inevitably begs the generic question unless the expression is intended to epitomize the speaker's philosophy of science. There is, of course, no such thing as scientific truth until the plural truths of the plural sciences become generified. In view of the plurality of independent disciplines in pursuit of different objectives by different methods, the conception of a single truth labelled "scientific" is either sheer dogma or the product of a reasoned theory. What is common to the various sciences forms no part of any particular science; the assumption of authority by votaries of special disciplines to act as spokesmen for science as a whole—for *its* aim, *its* procedure, *its* truth—is simply supererogation, involving the fallacy of begging the generic question. The generic question is one no specialist, whatever the field, can deal with by methods germane to his specialty; and if he abandons his methods, he obviously abandons his specialty, becoming instead a meta-scientific generifier *malgré lui,* but possessed of no greater than a layman's competence. The unity of scientific truth constitutes a problem no separate science can be concerned with without encroaching on a subject transcending its cognitive domain. The issue of scientific truth in its generic sense, falling as it does outside the purview of any and every science, belongs to a quite different level of inquiry. This is a point important enough to bear constant reiteration.

If the generic issue of scientific truth is to become a topic of philosophic study instead of being a matter of question-begging presumption, epistemology and ontology must be brought into play, for these are branches of philosophy chiefly intent upon

examining the conditions governing the distinction between the true and the false as it relates to cognition and its objects. In epistemology, it is the generic features of cognition that receive emphasis, in ontology, it is the generic traits of being, the contrast denoting the division of reflexive and non-reflexive subject matter. If the unification of the sciences is to involve a common truth, the issue is whether they are unifiable with reference to their ways of knowing, on the one hand, and to the ways of their objects, on the other. Assuming that true cognition for any science consists in revealing through its special procedure the nature of its appropriate contents, the unity of the sciences has no meaning unless they can be shown to exemplify a shared methodology or a shared ontology.

Since many are the ways of knowing as well as of being, the generification of the sciences as regards method or subject matter is a speculative undertaking on which no philosophy can claim to have a monopoly. Indeed, as noted earlier, the generification may be made to accord with every kind of speculation directing the generifying activity. Here everything depends upon selection of the sciences to serve as paradigms, and freedom of choice appears to be relatively unrestricted.

If the unity of the sciences is thought of as principally methodological, the generic features of the scientific method will not be found equally characteristic of all the specialties, some, for example, being more observational than others, or more experimental or more analytical or more deductive, and which of the specialties should be modeled on which for purposes of generification—this every philosophy determines in accordance with its own speculative bent. There is no hierarchy of the sciences, in the sense that some come to enjoy precedence in rank over others, except such as may be established by philosophic thought, primary disciplines becoming derivative and derivative, primary in the various meta-scientific interpretations of their order and connection.

The same consideration is pertinent when the sciences are viewed as constituting an ontological unity. Here liberty of choice is even greater. For the sciences are polyglot, speaking in many

tongues, depending upon the subject matter of their specialty. The basic idioms of physics, biology, psychology, sociology, and so on, are no more interchangeable than the specific objects to which they are adapted. Yet the generifiability of the sciences requires reduction of their separate dictions to a common existential language. Here, too, the language endowed with supremacy will be the language of such science or sciences whose vocabulary comports with the ontological commitment of the generifying philosophy. Although untranslatable into each other's special vernacular, the sciences, in defense of their supposed ontological homogeneity, must somehow be pressed into a Procrustean locution, physicalistic or phenomenalistic, mechanistic or vitalistic, naturalistic or idealistic, etc. Thus, however conceived, whether in the terms of a particular theory of knowledge or in those of a particular theory of being, the sciences owe their unity to philosophic generification, an activity which would be precluded without their antecedent differences in specific procedure and peculiar speech.

The activity of generifying the sciences being the exclusive privilege of no particular philosophy, what except lack of interest or ingenuity prevents its universal exercise? There might in principle be as many generifications as there are philosophies, and each generification would bear the impress of its author's theory of knowledge or theory of being. Upon the sciences themselves engaged in pursuit of their several objectives the various generifications ensuing could exert little or no influence. Astronomy and biology or physics and psychology would continue to perform their separate cognitive tasks wholly unswerved by the speculative attempts to accommodate them to each other's methods or dictions. The theoretical community of the sciences is a metascientific creation. Their congenerous procedures and contents, which result from supervening comparisons, are embodied in the horizontal structures of philosophy. And the plurality of such structures correspondingly entail plural conceptions of the unity of the sciences.

The generic notion of scientific truth must thus be viewed as

inseparable from the generic notion of scientific knowledge. The cognitions attained by the sciences by methods differing in accordance with differences of subject matter are generally represented as being true, and the autonomy exercised by every science in so representing its cognitive achievements remains unexceptionable. No science can sit in judgment on another's observations or experiments or generalizations or hypotheses or theories, these being adjudgeable only with reference to a special subject of inquiry. And the distinction between the true and the untrue, always relative to a particular field of specialization, applies in varying degrees to the various operations a science relies upon in its cognitive endeavors. An observation might be true or false, and so likewise an analysis, an assertion, a belief, a measurement, an induction. The man of science neither needs nor seeks external sanction for the use of his concepts, the concepts of the true and the false not excepted. Although obviously aware that a true observation can hardly be true in the same way or by the same token as a true statistical or a true syntactical statement, he would describe it as true nevertheless. Scruples of logicians and semanticists to the contrary notwithstanding, the sciences seem to employ the notion of truth with remarkable flexibility, depending upon the modes of procedure and the matters of inquiry for which it is requisite. Since these modes and these matters are not equatable, the meaning of truth comporting with scientific usage is distinctly multivalent. Such multivalence appears inescapable, seeing that claims to truth may be made for heterogeneous aspects or phases of cognition. We look in vain in any science for exclusive fidelity to a single method accorded supremacy by a philosophic persuasion. Cognition attained by a science is unquestionably a synthesis of observation and intuition, analysis and belief, experiment and generalization, hypothesis and theory, and the discernible elements of the synthesis must be true distributively if truth is to adhere to the entire complex. What becomes of the truth claimed for a body of knowledge when any of its component parts remains suspect? The truth of the whole is the truth of its parts, and the

parts, since they are not homologous, cannot be said to be true unequivocally.

The plurality that emerges from this situation sets the stage for a problem of the first order. For the plurality here is disconcertingly twofold. We have (a) a plurality of truths in connection with the various constituents of the complex method for obtaining scientific knowledge (such as observation, inference, hypothesis, etc.) and (b) a plurality of truths claimed for the different bodies of scientific knowledge (as the physical, the biological, etc.) This double plurality cries out for generification.

How, asking *à la* Kant, is meta-scientific generification of scientific truths possible? And what generification can conjoin such multivalent meanings of truth as pertain to the procedural processes and the labored structures of scientific cognitions?

Allusion to Kant is here not impertinent. For his was the contention that the sciences do assume *de facto* the conditions of valid knowledge the Critical teaching demonstrates *de jure;* the possibility of experience, signifying in Kant the same as the possibility of knowledge, represents a synthesis of actuality and necessity, the former having reference to its content and the latter to its form. More specifically, the categories, which the sciences willy-nilly employ in the formation and formulation of their respective cognitions, are derivable from certain basic types of judgment, judgment thus serving as matrix within which alone the truth of knowledge must be sought. The sciences, if I may paraphrase Kant, are open to generification in terms of concepts fundamental alike to their operations and objectives, and judgment, being the source of these concepts, becomes the generifying principle both of their truth-claims and truth-values.

Kant's epistemology apart, the variety of scientific procedures held to be variously true and the variety of truth-values claimed for various scientific products lend themselves to generification by a philosophy in which judgment plays a central and paradigmatic role.

Could any mode of scientific procedure be thought of as true if not submitted to judgment? Consider observation. Is it ob-

servation or an observational judgment that should be endowed with truth? To perception, which observation resembles, observation being in fact deliberate perception under controlled conditions, no truth-values can be attributed simply because it makes no truth-claims. Only perceptual judgment, i.e., judgment about acts or objects of perception, can lay claim to truth. Abstracted from judgment, perceptions are, so to speak, stubborn facts; the distinction between their true (veridical) and false (non-veridical) status lacks pertinency until a supervening judgment raises the issue of their credibility. Credibility is precisely ever the point in question with regard to observation; and upon judgment devolves the task of rendering credible or incredible the accuracy of the observing process or the authenticity of the observed datum. In the absence of judgment no observation could possibly serve as basis of scientific inquiry, and it is ultimately the judgment and not the observation that must be called true or false.

The expression "observational judgment" is certainly pat, showing that even in the first step of a scientific inquiry there is a definite truth-claim to be met. All subsequent moves are equally bound up with judgment. Where, for example, is the truth of an inference to be situated? The cognitive irrelevance of injudicial inference is no less obvious than that of injudicial observation. "Inferential judgments"—and this phrase, too, is telling—are those concerned with the putative credibility of certain acts of thought, and here again it is not the inferential but the judicial operations to which the distinction between the true and the false apparently accrues. Of like dependence for their truth upon judgment are all scientific procedures. Classification lacks truth until judgment supervenes to claim it, and the same holds of experiment, measurement, description, explanation, and every other exercise pertaining to inquiry: their truth-values are functions of judgment. From "observational judgment" to "explanatory judgment" the sense of truth seems continuous in accordance with the generic unity of the judicial process, the specific ways of judging being relative to specific modes and objects of inquiry.

What appears then as a plurality of truths may thus be re-

garded as amenable to generification in terms of judgment, and if judgment could be said to have a meaning free from ambiguity, scientific truth would indeed be conceivable as if it were one and whole. But, and here we must return to the previous question, "what is judgment?"

We need not rehearse the theme concerning the relation of judgment to belief and to discourse in virtue of which judgment resembles an epicene species, unequivocally neither psycho-centric nor logo-centric. In the present context the theme must be enlarged upon and from a somewhat different point of view.

What must first be placed in the foreground is this: the discursive pattern or structure, which no science or philosophy can do without, *is* judgment but conceived as something that only mind can make. This is a Kantian axiom it would be folly to deny. If mind is the maker of judgment—be it categorical or hypothetical, universal or particular, affirmative or negative, attributive or relational—a judgment embodies no less its maker's constitution than whatever content it happens to be about. Even a single cognitive judgment is a sort of artifact: it presupposes a content outside the judgment to which the maker of it must adapt himself but the content is in turn adapted to the mind's formal mode of utterance. Content and utterance are inseparable but distinguishable elements in every judgment. No judgment until or unless a mind makes it, and no judgment said to be true or false without reference to something other than the terms of discourse of which it is composed. Whatever the standard for a judgment's truth or falsity, it is such as only mind can formulate. Mind is thus not only maker of the judgment but also maker of the criteria to which it is subject. If this holds of any single judgment, it applies with still greater force to any series or system of judgments. No science or philosophy has its habitat in one utterance: it always appears in a structure of interconnected propositions in which data are marshalled to support theory and theory is propounded to interpret data. Such cognitive configuration contexted by judicial statements made about some given subject of inquiry represents what I am in the habit of calling an

"artifact of reason": it is produced by man out of material to which he must conform.[1]

The polarity of content and utterance, though ineluctable, reveals only part of judgment's multivalent nature. With the aid of prepositions, which have philosophic uses not often taken advantage of, a fuller view of judgment becomes possible. The requisite prepositions I have in mind may be shown by the following epitome of what I take judgment complexly to be. Judgment, as already noted, is nothing if not made *by* mind; its significant expression is *through* discourse; it applies differently *in* different situations; it is the claimant to truth *about* some determinate content. These prepositional distinctions indicate judgment's relation to the four contexts—psychological, logical, epistemic, objective—in which it is, so to speak, equally at home.

The dependence of judgment on mind as its maker may of course be utilized in various ways. For example, without this dependence construed in a special manner Kant's Critical philosophy would cease to be "Copernican" in the sense in which Kant so described his "revolution." Revolutions radically opposed to Kant's, such as the pragmatic or instrumental, could appeal to this dependence for equal support. The conception of a psyche whose cognitive behavior is rooted in judgment assimilable to belief is indeed a far cry from the transcendental unity of apperception. The primacy of judgment is open to various interpretations. The first preposition merely denotes the fact that in a mental agency lies the source of judgment; I speak of it accordingly as the "originative" preposition. So long as judgments presuppose mind *by* which they are made, be the mind conceived as transcendental or organismal, mind's disposition involved in the making of them will be a factor determinative of their truth-claims. This is simply a consequence of generifying judgment in predominantly psychic terms.

[1] For a more extensive discussion of this topic, cf. "Artifacts of Reason," *op cit.*, pp. 45-73, from which this brief paragraph is here reproduced in greatly altered form.

Subordination of judgment to proposition, by which passage is effected from psychology to logic, is likewise a matter of varying interpretations. There is no consensus of opinion whether propositions are or are not distinguishable from thoughts, on the one hand, and from sentences, on the other. And then there is the question of their ontological status, seeing that propositions are to be conceived as not depending for their "being" on a mental agency in which beliefs originate. But these controversial issues, intramural, as it were, are here irrelevant. Pertinent is only this: if judgment is to be stated, the statement *through* which it is conveyed must have a certain form, and no judgment, regardless of its content, can accordingly be *said* to be true, if its formal expression is self-inconsistent or otherwise logically offensive. And when a judgment's truth-values are lodged exclusively in the structure of the statement, the "vehicular" preposition, as I choose to call it, serves as principle of generification both of judgment and of truth.

The importance of the vehicles of reason can scarcely be underestimated. Even if (Hegel to the contrary notwithstanding) the real be asserted as irrational and the rational as unreal, the *assertion* of asymmetry of the real and the rational must accord with the principles of reason regarding its truth-claim and truth-value. And with the attribution of universality and necessity to judgments we enter openly the sphere of rationalism, for such attribution no belief nor any of its "empirical" contents can be made to support. There is a natural affinity between philosophic rationalism and the vehicular theory of truth.

In the epistemic context the use of judgment is catholic, and no way of knowing with claims to credibility can escape its jurisdiction. Implicated in every cognitive situation, from sensing to thinking, judgment varies in function with the situation in which it is exercised. Called upon to decide the issue of credibility, judgment makes the decision in conformity with differing criteria, depending upon the modes of experience amenable to its operation. Thus, as remarked before, the standard for judging observational credibility is not the same standard required for judging the

credibility of an hypothesis. Since judgment is so central in all knowledge, the distinction between the credible and the incredible being precluded without it, the preposition epitomizing this fact acquires a meaning I designate as "pivotal." Made *by* mind and conveyed *through* discourse, judgment enters *in* every cognitive situation. The need for judgment in this view is the need for an arbiter, so to speak, of the multivocal claims to truth inherent in the plural ways of knowing.

The theory of truth germane to judgment in relation principally to its epistemic function might not inaptly be described as the accommodative theory. Not every kind of knowing can claim to be true in the same sense as every other. If the task of converting truth-claims into truth-values devolves upon judgment, the task requires as condition *sine qua non* the adaptability of judgment to the irreducible varieties of cognitive experience.

If in its epistemic relations judgment enjoys the widest possible employment, looked at objectively, the range of judgment is more limited and its truth more definitely circumscribed. The ultimate accommodation of judgment is not simply to cognition but explicitly to that which cognition is alleged to be *about.* The last preposition, which I call "terminal," now becomes momentous, the accent falling rather on the matter apprehended than on the manner of apprehending it. To speak of judgment as having a terminus is to conceive as eventually attainable the truth concerning the authenticity of its object's being. Accordingly, the truth of judgment, now subject to the principle of complementarity referred to earlier, must be logical as well as ontological. Judgment regarded as judgment about things is under the dual compulsion of conforming to the rules of consistent discourse and of agreeing with the real nature of its subject matter. It is of minor importance whether "coherence" and "correspondence" are expressions naming theories or criteria of truth; in either case, judgment purporting to be a true existential proposition must keep faith with both, forfeiting claim to truth as *statement* when violative of the former and as *description* or *explanation* when lacking in the latter. In its coherent structure as well as in correspondence to its matter

consists judgment's terminative truth, its truth, in a word, being *about* an objective content assertable *through* a rational form of discourse.

The complexity of judgment, as shown by the prepositions relating to it, does not often receive adequate attention, with the result that the dictum "only judgment can be true or false" loses much of its merited cogency. A conception of truth which failed to single out judgment as its chief beneficiary might perhaps be entertained but scarcely with a high degree of plausibility. But if truth is to be claimed for judgment, exclusively or not, the ensuing question is formidable. Should truth be claimed for judgment's entire complex or only for certain of its components? The difficulty of the first alternative is patent: the truth of judgment as equally relevant to all of its different aspects denoted by the four prepositions, becomes necessarily, to use a trenchant phrase, truth quadrified: the irreducible constituents of judgment involve, as we have seen, meanings of truth and theories of truth and criteria of truth that admit of no mutual substitution. On this hypothesis, judgment must be viewed as claimant to four distinctive kinds of truth. The second alternative precipitates a difficulty no less embarrassing if not quite so obvious. The truth of judgment as relating to a selected feature of it is apt to become a truncated truth. For only one conception of truth, such as comports with the part of judgment invested with primacy, comes to be looked upon as prerogative or paramount. On the assumption, however, that all the four aspects of judgment enter into its differentia, though with varying degrees of importance, which could be safely considered negligible? This indeed is the issue in the proverbial nutshell. The tendency to identify judgment with a preferential part of its nature, the part chosen being in harmony with a particular notion of truth, entails a major fallacy. It might in the idiom here adopted be spoken of as the fallacy of the ignored prepositions.

No such fallacy can be laid at the door of science: the truth it vouches for is intimately bound up with the interplay of the

four prepositions. But the notion of scientific truth is burdened with the ambiguity accentuated before. Should it be taken in a distributive or in a collective sense? It is one thing to have in mind the truth of the knowledge pursued by the separate sciences separately, it is quite another to conceive of a single truth of which the different sciences represent cognate versions. The distinction acquires fresh importance because of the light it throws on the "prepositional values," so to say, belonging to judgment, their variability hinging upon whether scientific truth be viewed as specific or generic.

As regards truth in its specific or distributive sense, there is no science not beholden to all the four prepositions for the attainment and expression of true knowledge. The complex of true knowledge designated as scientific is certainly an amalgam of beliefs entertained and propositions formulated and experiences sifted and existents comprehended. To be sure, not in all the sciences, nor in every science at every stage of its development, do the prepositions enjoy equal pertinency or prominence. Such sciences, for example, as rely chiefly on experiment differ greatly from those leaning heavily on mathematics. One thing to devise plans of action for verifying beliefs, quite another is to demonstrate statements *more geometrico*. Who can question the propriety of speaking now of a scientific hypothesis experimentally confirmed and now of a scientific proposition deductively established? The adjective "scientific" is here equally fit and relevant. All cognitive diction varies with the subject matter studied and with the requisite ways and phases of inquiry. Yet no inquiry, it hardly needs mention, can be divorced from opinions held *by* minds *in* certain situations and asserted *through* discourse *about* the area of things examined. The last preposition, however, is one in relation to which the others are auxiliary.

The objective aim of true knowledge, of which the terminal preposition "about" is symbolic, has special implications for every science on account of its preëmptive subject matter. The principle of topical differentiation, discussed in earlier chapters, by which the sciences are governed, insures to each an autonomous

as well as a limiting status. It is tempting to regard the sciences as analogous to political states whose sovereignty does not extend beyond the boundaries of their respective territories. The true knowledge concerning its specialty which a science arrives at in accordance with its appropriate mode of procedure cannot legitimately encroach on the true knowledge attained by a different science relating to another specialty. What a science is about ultimately determines the appositeness of the other prepositions. But there is no scientific knowledge about anything unless conveyed by minds in given contexts through discursive forms. This formula epitomizes the "prepositional relativity," if I may so call it, involved in all knowledge. To think of knowledge as relative to its objects alone in abstraction from inquiring minds and their ways of inquiring is to reduce a relativity actually quadruple to one deceptively univocal.

The predominance which the terminal preposition enjoys in scientific knowledge has an obvious explanation. Bound by a special subject matter of which the initial data are compulsory, a science requires that everything in it be subordinated to an existential content—beliefs of its votaries, modes of investigation, vehicles of utterance. But such subordination is not elimination. The history of science reveals how greatly the career of every discipline hinges upon the afflatus of individuals, improved ways of study, refinement of conceptual apparatus. The last phase of a science is never the final phase. Relativity to all the prepositions remains inexpugnable; and if the emphasis does fall on the terminal preposition the reason simply is that the terminus of a science, the objective pursued, is determined by compulsory pre-analytic data. Since no science is free to choose the data denotative of its subject matter, that which is given at the post-analytic level—given, that is, by constructive thought and through procedural ingenuity and in sundry contexts—cannot be in disaccord with the given as basic to inquiry and inceptive of it. Accordingly, what a science is about represents a determinate subject matter adumbrated in the inchoate data exacting compliance, all subsequent data, such as result from the interplay of

the various prepositions, must be continuous with those preceding to retain their relevance to the same area of specialization.

The pre-analytic data of a science not being optional, the truth sought can only be about a subject matter as originally given *for* inquiry, and to the subject matter as thus given, the post-analytic data, those ensuing *from* inquiry, must have reference and application. In what sense then could a science be spoken of as autonomous? Scientific autonomy, in a word, extends not to choice of pre-analytic data but only to treatment of the same. The freedom of a science lies in preëmption of subject matter, and once preëmpted, the basal data in which the subject matter appears, the phenomena initially diagnostic of it, demand provisional acquiescence, all other data, intermediary and summital, which are data of interpretation, represent the fruits of sustained inquiry. Exclusive possession of subject matter remaining unchallenged and unchallengeable, every science may claim independence of every other. Sovereign within its special province, it cannot be encroached upon by a rival discipline. Indeed, since the sciences do not compete for the same subject matter, there can be between them strictly speaking no rivalry at all.

All this follows ineluctably from a distributive view of scientific truth: every science thus comes to enjoy relative autonomy in pursuit of its special cognitive objective. Although the liberty of every science is restricted as regards choice of pre-analytic data, in monopoly of subject matter its independence of every other science is unexceptionable.

But when attention is focused on scientific truth as having a collective import, the problem we face is the problem of philosophic generification. That the sciences are *intent* on a common truth belongs to those rash assumptions actually contrary to fact; what is undeniably the case is just the opposite: the plurality of the sciences pursue separately their separate truths. With a truth characteristic of them jointly, the special sciences are not explicitly concerned; the issue of their generic truth, if raised at all, can only be dealt with *ab extra* by supervening philosophies whose

generifications are many and various, depending upon the points of view from which the generifying activity derives its impetus and direction. To what a previous chapter has already been said on this theme we need here but append a brief comment or two.

It should be noted particularly that generification of scientific truth rests on an autonomy markedly different from the autonomy pertaining to a science in search of the truth pertinent to its individual inquiry.

(a) For generic as contrasted with specific truth, no pre-analytic data of a subject matter appear to exact inevitable compliance. Data requisite for generification are comparative data and as such non-compulsory, comparison of the sciences being subject to variation in accordance with variation of philosophic interest and procedure. If the truth aimed at by two separate disciplines—let us say, astronomy and zoölogy—we designate as "scientific," is the truth thus designated to be understood as specific or generic? In the former case, truths astronomic and zoölogic are specifiable in terms of different contents disclosed in observational or denotable data compelling initial acquiescence; in the latter case, the generified truth in which both disciplines are said to share presupposes comparison of their methods and materials, and comparison from diverse positions, each discipline thus capable of serving as the other's paradigm, so that choice of data necessary for generification becomes decidedly optional. And when all and not merely two of the sciences are theoretically open to all kinds of comparison, free data become available for a plurality of generifications convertible into a pluralism.

(b) Free selection of pre-analytic data is not a prerogative a science can boast of: its autonomy is strictly limited; though free to appropriate and explore a special field of inquiry, it must perforce submit to the data defining or denoting the field. Although science offers no analogue as regards control over the pre-analytic data exemplified by a generic theory of truth, there is no analogue in philosophy of scientific preëmption of subject matter. In this respect the autonomy of every science, its independence of every other, is indeed supreme. There simply are no

rival sciences if rivalry signifies common strife for the same subject matter. Astronomy and zoölogy, to mention them again, do not compete for each other's territory; neither ventures to invade a province of knowledge already occupied. Now preëmption of subject matter, a principle inviolable in science, is without force in philosophy. No speculative theory can take possession of a field not equally open to another in competition with it. How striking is the contrast between scientific truths and their philosophic generifications! No science can claim jurisdiction over the truth of any knowledge except the knowledge pertaining to its own domain of specialization within which alone its authority is unchallengeable. To a generic conception of scientific truths no particular philosophy has indisputable title: the sciences presupposed for interpretation belong as exclusive subject matter to no single speculative study, every such study being co-equal with every other in its right to take as topics for inquiry the various truth-claims of the separate specialties.

The difference between scientific and philosophic autonomy has an important bearing on the prepositional conception of truth suggested above. As far as a science is concerned, though dependent for its truth-values on the interplay of all the prepositions, the "terminal" one is clearly in the ascendant, owing to the sort of autonomy exercisable solely within a delimited field of inquiry of which the pre-analytic data are compulsory. While scientific knowledge cannot be attained save by individuals who through discourse convey what appears or occurs in given situations, it is always knowledge *about* a denotable subject matter, the stress necessarily falling on the last preposition in all claims to scientific truth. Now in claims to truth of philosophic knowledge, made in areas of inquiry not subject to strict delimitation, whence free choice of pre-analytic data, the interplay of prepositions is apparently more variable. This may be briefly indicated in connection with generifications of scientific truth, here taken to represent operations preëminently philosophic.

Scientific truth as genus exemplifies what I venture to call an

intellectual artifact—something manifestly produced by men. And while scientific truth in its specific sense is likewise an artifact, resting as it does on judgment none but men can make, the material whereof it is made must, so to speak, be provided by nature, the repeated emphasis on compulsory data serving as intimation of this. But the generic notion of scientific truth is an artifact more palpably "artifactual" (if the adjective be permitted), for the material for it must come from the sciences as susceptible of comparison with respect to their contents or procedures or results. Generifications of science, strange though it may sound to say so, are artifacts of artifacts. They may not inaptly be called, borrowing Dedekind's famous expression applied to mathematical systems, "free creations of the human mind."[2] In generifying truth the part played by mind is more decisive than in specifying it: in specifying truth, the sciences are inevitably bound to their objective fields of inquiry, a free mind being implicated only in preëmption and exploration and interpretation of the same; in generifying truth, philosophies, too, must submit to their chosen material of study, but since the material consists of the sciences themselves, man's liberty is here exercised in defining differently the nature of the material, in selecting differently the pre-analytic data exemplary of it, and in construing differently the function of judgment upon which the separate sciences depend for asserting their specific claims to truth.

The crux of the matter lies in the liberty philosophy enjoys to choose its pre-analytic data. Since data of generic subject matter are so various and so variable, hinging upon the philosophy *by* which the choice is made, the preposition I have named "originative" assumes overwhelming importance. Generifications of scientific truth may thus appear as poles asunder, seeing that the comparative data upon which they are based, whether relating to method or content, have their origin in incomparable visions or

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[2] Quoted by Josiah Royce in "The Principles of Logic" in the *Encyclopaedia of the Philosophical Sciences* (London: Macmillan and Co., 1913), p. 95. Dedekind's "*freie Schöpfungen des menschlichen Geistes*," as interpreted by Royce, are not capricious but rational. All pure forms of logic Royce regards as exemplifying a synthetic union of "creation" and "discovery."

intuitions, beliefs or postulates, postures or perspectives. Of the comparative data, in short, which the sciences could be made to yield, some will owe priority over others to a philosophic position with a predilection for them. Other positions, other data. This must be so on the assumption that generifications of science represent theoretical artifacts whose constructions embody the different interests and the different aims of their respective "artificers."

But these constructions, whatever the inspirations or persuasions behind them, being discursive, bring into play the "vehicular" preposition, and the propositions *through* which generifications become articulated must satisfy logical criteria, chief of which is freedom from contradiction. It goes without saying that the principle of contradiction has nothing to do with the selection of the data requisite for generifying scientific truth: it prescribes none and it proscribes none. The priority of the chosen data has its roots in a philosophic position for the assumption of which there is no compulsion. But once the position is assumed upon which certain data depend for their privileged priority, the commitments incurred thereby and the implications developed therefrom and the language adopted therefor must all exhibit the kind of consistency subject to the law of contradiction. Every generification thus requires vehicles of utterance through which alone its structure comes to possess logical coherence. And from such logical coherence no generification can claim exemption without banishing itself from the realm of philosophic thought.

More obvious, it would seem, is the relativity of truth to the different situations *in* which it has its locus. And no hyperbole is involved in the use of the term "pivotal" as descriptive of the preposition which epitomizes this relativity. How conceive of judgment with claims upon truth without reference to some content in some context? The context requisite for any science, as noted earlier, is ever specific, varying in scope from the observational to the theoretical. At every stage of scientific inquiry, none but judgments can make truth-claims, judgments such as inferential or taxonomic or explanatory, and it is the contexts in which the claims are made that determine the criteria for testing

them, it being clear that experimental and statistical judgments, for example, do not have credibility on the same evidential grounds. Relativity of contexts, in which truth undergoes shifts in sense and application, has an important bearing on the variety of philosophic meanings accorded to truth. For every context in which truth figures in scientific inquiry, be it one of observation or experiment or measurement or induction, may serve as matrix or paradigm for generification, and the different truth-functions in a "continuum of inquiry," to use John Dewey's felicitous phrase, tend in separate generifications to become isolated as independent truth-structures.

To the specificity of scientific subject matter appearing in compulsory data the "terminal" preposition owes undeniable preeminence. For a science, not being a reflexive discipline, is concerned with a study of *things,* and what a science is thus emphatically not is dysontological. The truth it aims at is *about* the existential status and the essential nature of the material pertaining to its particular specialty. Of the fragment of the world given for and through its elaborate inquiry, every science affords knowledge which is authentic and authoritative. It would indeed be foolhardy for any philosophy to discount or amend such knowledge. But a philosophy is not rash if, following its inevitable penchant for generification, it seeks in the partial ontologies of the various sciences some common denominator. When, ceasing to be reflexive, philosophy appropriates for its subject matter the distributed contents of the sciences conceived as collective, its cognitive task consists in discovering the master traits of being for which the existential theories embodied in the special sciences serve as generifiable material. But, as remarked above, pre-analytic data for such generification are non-compulsory. Comparable from sundry points of view, the contents of the sciences are amenable to interpretation by different kinds of ontology. Even philosophic dysontology—philosophy hostile to metaphysics, such, for example, lost in the arid regions of sense data or semantic punctilios—might not implausibly look upon the sciences as if created in its image, but this, too, would be a generification

of them governed by a posture some minds are evidently not incapable of assuming. Many thinkers, however, with a propensity to speculate on the nature of things, have no difficulty in rendering the contents of the sciences conformable to their basic positions. There is nothing in the sciences themselves that precludes their adaptability to every type of ontology. And if the contention here advanced is at all tenable, the very possibility of plural generifications, none dictated or prohibited by the principle of contradiction, would seem to lend support to an ontological position definitely pluralistic.

The prepositional functions, if I may speak of them thus, reveal themselves as distinctly variable, but less so in relation to scientific truth in its specific than in its generic sense. If there were a way of indicating in summary fashion the fundamental difference between philosophy and science, it would perhaps be this, that in philosophy the prepositional functions are variable more independently than they are in science.

Consider the not uncommon identification of philosophy with vision. If what is definitive of philosophy be regarded as vision, an independent value would seem to accrue at once to the originative preposition. For what source other than mind can vision have? Philosophic vision, in abstraction from what it is incited by or bent upon, is not unlike poetic vision in afflatus and intensity and sweep. Only they will quarrel with the analogy who are still prone to the partition of mind into separate "faculties." Are thought and imagination mutually exclusive? The heart has its reasons and the intellect its passions; and what a jejune analysis shows to be sundered a dialectical logic may exhibit as related. If philosophic vision has a poetic quality, poetic vision is not without philosophic import. The poetic vision of Platonic philosophy and the philosophic content of Lucretian poetry are illustrations too apparent to harp upon. There are examples less obvious. A comparative study of the artifacts of thought and of imagination (to differentiate in this facile manner philosophic and poetic products) would disclose their manifold

affinities to those not unwilling to look for them. But this is another story. The theme is here broached to suggest that to speak of philosophy as vision is not improper. If philosophy *is* vision, the fount and origin of its truth can be found nowhere but in certain minds. And notably many are the visioned truths asseverated with equal zeal by those to whom they are vouchsafed.

More readily assertable as an independent variable is the vehicular preposition. When philosophy grows excessively abstract and unduly rigid in articulation, its resemblance to mathematical systems, in spirit if not in procedure, is no coincidence. Of the traditional interdependence of mathematical and philosophic interests the evidence is impressive. Small wonder that a method through which the certainty of propositions could be so firmly established should have appeared to many as paradigmatic. To imitate or emulate mathematics thus becomes for certain thinkers the chief desideratum. What in some quarters turns out to be philosophically decisive is not poetic range of vision but probative procedure such as geometrical. The medium through which concepts receive exact formulation now acquires primacy, their contents being considered secondary or derivative. The necessity and universality attributed to certain philosophic propositions are by common consent held to transcend the limits of experience however experience be defined or its limits envisaged. Proceeding from its chosen postulates and governed by its own rules, thought may succeed in producing discursive artifacts of imposing design, their internal order and connection resting on deductive grounds. But of such artifacts of reason many and various kinds are producible. From different but equally possible postulates different but equally consistent systems are capable of being developed. Highly instructive from this point of view is the number of geometrical artifacts constructible on a non-Euclidean basis. All deductive systems of philosophy, though at loggerheads with one another, may legitimately contend for the universality and necessity of their propositions, provided the postulates behind them are not rejected or supplanted.

Multiple philosophic visions proclaimed as true by the inspired

minds in which they are bred have their counterparts in the multiplicity of philosophic constructions demonstrated as true through the forms of discourse subject to criteria of consistency.

And how independently variable is the pivotal preposition, seeing that the situations in which philosophies are involved are so diversely conditioned! Here the notion of "historic relativity" and the conception of "sociology of knowledge" have relevant application. No doctrine flourishes in a social or cultural vacuum. Could any man, Santayana not excepted, make good the boast that his philosophy would have been the same "under whatever sky"? The social orders in which visioned or postulated truths come into being are spatio-temporal; they have their rise and decline in circumstances subject to mutability. Changes in religious beliefs, in political institutions, in forms of art, in economic relations, precede or follow changes in philosophic persuasions, all changes within a particular culture being mutually implicated. Human values, including those called intellectual, have their dated histories and local habitations. It is thus not impertinent to conceive of philosophy as a chapter in an expanded anthropology. Platonism and Aristotelianism could scarcely have made their appearance except under a certain sky; and a climate especially favorable to them accounts for their later renascence. Every philosophy, whether it bear the name of its individual founder (as Thomistic or Cartesian) or have a national label (as British empiricism or German idealism), lends itself to treatment as if it were the subject of a biography, its career, like that of everything affected by the touch of time, marked for eventual senescence and death. The story of philosophy, no negligible episode in the larger story of mankind, is an episode nonetheless. All the given varieties of it, be they taken as poetic visions or logical patterns, may come to possess truth, but truth conceived as relative to cultural mutations and social vicissitudes. There is in this view no truth save truth *pro tempore,* changing with time as must all things in time.

No less of an independent variable is the terminal preposition. Of ultimate consideration is that which philosophy is about, for

without material reference philosophy forfeits its cognitive function. When true knowledge of things is regarded as the objective of philosophy, the objective is that of science, but with a difference. The difference, as noted in these pages again and again, has to do with the scope of generification. The ontologies of the sciences are limited ontologies: the traits of being they disclose are traits of the things falling within separate domains of specialization. Of the existential judgments wrought by a science it could be said that they are both universal and particular—universal in embracing the totality of the phenomena pertaining to its cognitive area, particular in extending to no other phenomena. Far from being as often alleged non-metaphysical or anti-metaphysical, every science is metaphysical with a vengeance; it is always concerned with general or generic traits of being; but since these traits are those of specific subject matter, the proffered categories of description or explanation have application only within the definitely prescribed confines of a given field of inquiry. There are, and the statement is not meant to be facetious, as many metaphysical artifacts as there are kinds of things appropriated by the sciences for separate existential judgments. But metaphysics in this distributive sense involves restrictive use of the terminal preposition: existential judgments embodied in a science are always about a subject matter whose pre-analytic data are compulsory. It is in metaphysics designedly speculative that the terminal preposition appears to function as an independent variable: theories of the traits of being, universal not only in covering all the instances of a determinate class of phenomena, but universal in comprehending the universe, have reference to a subject matter the pre-analytic data of which are freely eligible. The sciences, the generification of whose separate ontologies belongs to speculative metaphysics, are open to different comparison. This renders equally possible different types of metaphysical speculation. Each aims at a "deduction" of all-inclusive categories, and those endowed with priority in one type sink in another to the level of concepts either derivative or ancillary. The master traits of being are clearly susceptible of sundry generifications by

rival philosophies. And so long as generifications remain unyielding to attempts at reducing or assimilating them to one another, conversion of their actual plurality into a feasible pluralism would appear to be the only defensible alternative.

From the discussion of the prepositional variables relating to scientific and philosophic cognition some general conclusions may be summarily indicated.

1. The variables are more relatively independent in philosophy than in science simply because freedom is a principle more operative in philosophic cognition than in scientific. To be sure, upon both kinds of cognitive discourse the law of contradiction is binding, and there are certain concepts, notably the correlatives of plurality and unity, to which they are equally bound. But if what differentiates philosophic subject matter from scientific is a subject matter principally generic, cognition of it lies in a dimension in which philosophy is allowed a latitude for which science affords no analogue. For it is to discursive thought that the concept of the generic owes its genesis and delimitation. Although the material requisite for generification must first be given, the pre-analytic data chosen by one philosophy will differ from those selected by another, the choice being determined by every philosophy exercising the generifying activity in accordance with its basic position. It is in this sense and in this alone that the pre-analytic data of generification may be called free data. Hence the importance of the non-terminal prepositions. The individual philosophy *by* which and the cultural milieu *in* which and the technical medium *through* which generic artifacts are produced constitute the more or less independently variable but indispensable conditions underlying the generifying activity.

2. But the relative independence of these variables does not affect the argument that philosophy has a cognitive office continuous with that of science. In the sciences, too, knowledge hinges on the interaction of prepositional functions, though not so independently variable, but the knowledge resulting from their interaction remains dispersed among the special disciplines. The

existential judgments of the sciences based upon different methods have reference to different kinds of subject matter, and many and various are the limited ontologies the sciences may support by the diversity of their procedures. That the sciences are comparable in method and content can only be shown by acts of comparison such as are capable of being discharged by different philosophies in different ways. The generic nature of scientific knowledge and of scientific truth is certainly not given as such. It is the gift, so to speak, of philosophic construction. And in this gift are involved all the independently variable prepositions, with the result that a plurality of generic theories is possible, each with a claim upon truth regarding the unity and continuity of scientific knowledge.

3. The interplay of prepositional functions has a decidedly important bearing upon the ambivalence of philosophy as cognitive and non-cognitive. For there are in philosophy properly so named branches concerned with judgments not directly existential. Non-cognitive or non-existential interests, and the adjectives may be here understood as interchangeable, would seem to be more basically related to the originative and pivotal than to the vehicular and terminal prepositions. So long as descriptive and prescriptive judgments may be validly entertained, the shift from one kind to the other involves a shift in prepositional emphasis. Judgments primarily normative are clearly not identical with (though scarcely independent of) those explicitly descriptive. Judgments of valuation, whether ethical or aesthetic or other, are not without truth-claims but the truth-qualities assignable to them are not such generally held pertaining to cognitive judgments alone. The passage from the World of Description to the World of Appreciation, to speak (though not exactly in the same sense) in the terms made familiar by Josiah Royce, requires that we accord to some independent variables priority over others. The matter is complicated and notoriously controversial. My excuse for broaching cavalierly at the tail end of the book a topic of such weight is simply to suggest how the non-cognitive area of philosophy, from which I have deliberately kept aloof, could with

some precision be differentiated from philosophy as a realm continuous with science in cognitive function. If science represents the minimum independence of the prepositional variables, non-cognitive philosophy exemplifies the maximum, philosophy in its cognitive aspect being, as it were, intermediary.

4. But in view of the book's exclusive preoccupation with the strictly cognitive function of philosophy, what ultimately matters is the relation between the interplay of the prepositional variables and the conception of pluralism elaborated in its pages. The relation is clearly one of mutual implication. It only remains to be remarked by way of clarification that the pluralism here defended is dialectical, applying not so much to the nature of things as to the plural philosophies about it. Not the universe itself can with complete assurance be said to be pluralistic but only the universe of discourse in which it enters. The inference of a pluralistic universe is not unwarranted but it has the validity of an inference only. All cognitive discourse, whether scientific or meta-scientific, must conform to the law of contradiction; while prohibiting its violation, the law generously permits many competing conceptions of the universe, including the monistic, the enjoyment of internal self-consistency. And in spite of their dialectical incompatibility such competing conceptions not only may but actually do lay claim to truth. How should their claims be dealt with if not by a generified theory of truth in accordance with which truth-values could be assigned to but one of the claimants? On the assumption, however, that truth is itself generifiable in various ways, a pluralistic theory of truth seems inescapable. If *about* the nature of things no single theory of truth can dispose of rival theories, the hypothesis regarding the pluralistic structure of the universe, though not ineluctable, is not implausible. But from dialectic to the universe the road is difficult and never sure. Yet what but dialectic can render indispensable the need for generification of knowledge and of truth? And what except dialectic can render problematic the claim that one generification has priority over another?

We can obviously not stop here. The end of the book does of

course not terminate the reflective process it embodies. The conclusion reached is but an invitation or challenge to reëxamine the issues and to reconsider the arguments. Neither author nor reader can fail to advance beyond the limited aim pursued in this work. Of the cognitive aspects of philosophy further and deeper meditations call for utterance. And in need of attention are its noncognitive interests without reference to which no conception of philosophy can escape appearing seriously maimed. To another undertaking belongs the task of dealing with matters here incompletely developed or sadly neglected.

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